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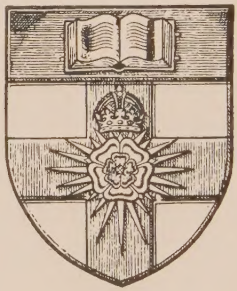

UNIVERSITY OF LONDON
LIBRARY

THE SURVEYORS' INSTITUTION

(Incorporated by Royal Charter),

12, GREAT GEORGE STREET, WESTMINSTER, S.W.

TRANSACTIONS.

VOL. XVIII.

SESSION 1885-86.

LONDON:

PUBLISHED AT THE INSTITUTION,

12, GREAT GEORGE STREET, WESTMINSTER, S.W.

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BIBL. LONDIN. UNIV.

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PRINTED BY PHIPPS AND CONNOR, 13 AND 14, TOTHILL STREET, WESTMINSTER.

CONTENTS.

Page.		No. of Paper.	Author of Paper.	Date.
i	Title-page of Vol. XVIII.			
v	List of Officers for Session 1885-86.			
vi	Objects, &c., of the Institution			1885.
1	Opening Address as President	132	E. I'Anson. .	Nov. 9.
33	The Copyhold Enfranchisement Bill, 1884-85 . . .	133	E. Smyth . .	Nov. 23.
87	The Cost of Production and the Value Received for our Various Farm-Crops . . .	134	A. D. Wells .	Dec. 7. 1886.
123	Discussion on Mr. Wells' Paper			Jan. 11.
161	Discussion on Mr. Smyth's Paper			Jan. 25.
179	Rights of Foreshore. . . .	135	H. B. Hans Hamilton .	Feb. 8.
217	London Remodelled . . .	136	Wm. Woodward	Feb. 22.
265	Discussion on Mr. Woodward's Paper			Mar. 8.
291	The Taxation of Real Property	137	W. Mathews .	Mar. 22.
335	Discussion on Mr. Mathews' Paper			April 12.
361	The Geology of the Surface in its Practical Aspects. . .	138	W. Fream . .	May 3.
403	The Recent Municipal Works in Rome	139	E. I'Anson .	May 17.
439	Annual General Meeting and Election of Officers for 1886-87.			
440	Presentation of Prizes.			
442	Report of Council.			
450	Memoir of J. J. Bateman.			
450	,, E. E. Cronk.			
451	,, E. David.			
452	,, W. Dew.			
453	,, H. P. Foster.			
454	,, C. F. Humbert.			
454	,, G. H. Hussey.			
455	,, D. Kingsford.			
455	,, R. H. Rigden.			
457	List of Donations and Contributions to the Library.			
461	List of Members.			

ERRATUM.

Vol. XVIII., p. 354, seven lines from bottom, for "less" read "his."

The Surveyors' Institution

(Incorporated by Royal Charter),

12, GREAT GEORGE STREET,

WESTMINSTER, S.W.

OFFICERS, 1885-86.

COUNCIL.

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Vice-Presidents.

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JOHN WORNHAM PENFOLD

Secretary.

JULIAN C. ROGERS

The Surveyors' Institution

(Incorporated by Royal Charter)

Is established—

1. To secure the advancement and facilitate the acquisition of that knowledge which constitutes the profession of a Surveyor, viz.—the art of determining the value of all descriptions of landed and house property, and of the various interests therein; the practice of managing and developing estates; and the science of admeasuring and delineating the physical features of the earth, and of measuring and estimating artificers' work.

2. To promote the general interests of the profession, and to maintain and extend its usefulness for the public advantage.

The Institution consists of four classes, viz.—Fellows, Professional Associates, Associates, and Honorary Members, with a class of Students attached.

A Fellow must be more than twenty-five years of age, and must have acquired a practical knowledge of surveying in one or other of its branches as above defined; he must have so practised on his own account for more than five years; or must be a member of a firm of Surveyors established upwards of ten years; or in partnership with a Surveyor of ten years' standing;* or he must have passed the Voluntary Examination declared in the Rules of Examination to appertain to the class of Fellows. Fellows have the right, conferred by the Charter, to use the letters F.S.I. after their names.

A Professional Associate must be more than twenty-one years of age, a Surveyor by profession, in practice on his own account or employed as an Assistant in a Surveyor's Office and qualified for the class by having passed the Students' Proficiency Examination, or the Professional Associates' Qualifying Examination. Professional Associates have the right, conferred by the Charter, to use the letters P.A.S.I. after their names.

**These qualifications hold good until the provisions of the Charter relating to the Compulsory Examinations for Fellows come into force.*

An Associate must be more than twenty-one years of age, not a Surveyor by profession, but his pursuits must be such as to qualify him to concur with Surveyors in the advancement of professional knowledge.

An Honorary Member must be a person who, either by reason of his position or experience, or his eminence in science, may be enabled to render assistance in promoting the objects of the Institution, but who is not engaged in practice as a Surveyor in Great Britain or Ireland. He has the privilege of being present and taking part at all Ordinary General Meetings, and of access to the Library, but no right of voting, discussing, or otherwise interfering in the affairs of the Institution; nor is he called on to contribute to its funds.

Students (who must not be under eighteen years of age) qualify as such by passing the Students' Preliminary Examination. Candidates for Studentship who can produce a Certificate of having passed the Matriculation Examination of the University of Oxford, Cambridge, London, or any other University in the United Kingdom, or who have passed, with Honours, the Senior Local Examination of the University of Oxford or Cambridge, or who have obtained a Higher Certificate at the Examinations of the Oxford and Cambridge Schools' Examinations Board, are exempted from this Examination, and may be admitted by the Council on the recommendation (according to a form) of four Fellows and two Associates, or of the Fellow or Associate to whom they are or have been articled; but it is obligatory on all Students to undergo the Proficiency Examination at the close of their Student course, at the time and under the conditions applying in each particular case under the Rules of Examination.

The Council may accord to Students such privileges, subject to such terms, regulations, and restrictions, as they shall from time to time prescribe.

Any person desirous of being admitted into the Institution (excepting to the class of Students) must be proposed and recommended according to a form, in which the full name, place of business (if any), usual residence, and qualifications of the candidate must be distinctly specified. This form must be subscribed by him, and signed by at least six Fellows or four Fellows and two Associates, certifying a personal knowledge

of the candidate; or, in the case of a person who has passed the Qualifying Examination, by four Members of the Council, of whom the President shall be one, after careful enquiry into the antecedents of the applicant.

The proposal so made, being delivered to the Secretary, will be submitted to the Council, who, on approving the qualifications, will determine the class for which the candidate is to be presented for ballot at an Ordinary General Meeting.

The following are the rates of contribution to the funds :—

	Annual Subscription. £	s.	d.	Admission Fee. £	s.	d.
Student . . .	1	1	0	—		
Associate . . .	2	2	0	3	3	0
Professional Associate	2	2	0	3	3	0
Fellow . . .	3	3	0	5	5	0

No person can become a Member (other than an Honorary Member) of the Institution, unless and until he pays as his first Subscription to the Institution, in the case of becoming a Fellow of the Institution, the sum of Eight Guineas, in the case of becoming a Professional Associate of the Institution, the sum of Five Guineas, and in the case of becoming an Associate of the Institution, the sum of Five Guineas.

All Fellows, Professional Associates, and Associates, are required, within twelve months after their election, to deliver to the Council an original Paper on some subject connected with the profession, or to make a donation to the Library or Collection.

The affairs of the Institution are under the management of a Council, which is elected annually, consisting of a President, four Vice-Presidents, eleven Fellows, one Professional Associate, and two Associates.

The Session of the Institution commences annually on the second Monday in November, and continues to the end of May. The Ordinary General Meetings are held on every alternate Monday during the Session. At these Meetings original communications are read on some professional subject, and their merits fully and freely discussed. Every Member has the privilege of introducing one visitor to these Meetings. Members are entitled to a copy of any printed publication issued by the Institution after their admission.

Paper 132
No. 225

THE OPENING ADDRESS

BY

EDWARD I'ANSON, President,

AT THE ORDINARY GENERAL MEETING OF

THE SURVEYORS' INSTITUTION,

November 9th, 1885.

My first, and a most pleasant duty, is to thank you for the great honour you have done me in electing me to preside, for a short period, over the affairs of the important and influential Institution to which we belong, and to fill the position of President amongst gentlemen who worthily represent the interests of the great owners of land in this country—a vocation requiring the highest standard of honour and integrity, and great professional skill.

The Report of our Council, presented to the last General Meeting, sets forth so fully the increase during the past official year of the number of new Members, the loss by death of old Members of the Institution, and our financial condition, that it is unnecessary for me to offer any observations on those points, nor on the substantial results which have been derived from the system of Examinations which has now been established for five years; but I may just note that, after being established only twelve years, this Institution obtained a Charter, under which we have worked for five years, having now close on 1,200 Members, and a Library of special books containing about 3,500 volumes. This may be a fitting place to allude to an impression, which I under-

stand to some extent exists that Membership is no longer obtainable except by Examinations; and, although this is true as regards Professional Associates, it does not hold in respect of Surveyors already in practice, to whom the Fellowship remains open on the old terms for another five years.

You are aware, gentlemen, that my own professional practice has not been in connection with land as agricultural land, but with buildings and with building land; and even that has been confined to a comparatively limited area, for I am essentially a Londoner. I must therefore rely on your indulgence if you find me ignorant and wanting in that branch of our profession which deals with the great interests involved in agriculture and farming; but the wise constitution of your Institution is such that you admit Members who practise in any branch of the profession of Surveyor, and, as each branch requires a special knowledge, we can hardly be proficient in all.

Gentlemen, before I proceed further, I desire, and I think, in speaking for myself, I express your own sentiments, when I desire to speak with high respect for the very able manner in which your late accomplished PRESIDENT discharged the duties of his office for two consecutive years, and how noticeably he enforced on us all, and especially on the younger members of our craft, the duty of conducting the professional work in which we engage on principles of honour and integrity.

Born, as I was, in the City, and having lived there all the days of my youth, and having there carried on my professional work, naturally my experience has been chiefly of City of London life; and it may not be uninteresting to look back and think what a vast amount of professional work there has been in the City of London during the last two generations for Surveyors to do.

Those were the days when JOHN HORATIO LLOYD, whose

removal by death from amongst us we have only recently to note and deplore; Sir WILLIAM, then WILLIAM BOVILL, and since Chief Justice of England; Sir HENRY, then HENRY HAWKINS, now one of Her Majesty's Judges, who is still spared to us; THESIGER, and some few others, used to fight the battle of figures before the juries empanelled to settle the sometimes too wide differences which existed.

Some of these gentlemen we have lost; some have been promoted to posts of honour, and so withdrawn from our sphere of action; and, however able the present successors of these gentlemen may be, my own impression is that the adroitness and persuasive address of JOHN HORATIO LLOYD; the instinctive energy with which Sir WILLIAM BOVILL seized on the weak point of his opponent's case, and the bull-dog pertinacity with which he clung to it; the cheerful zeal and ability, and I may almost say audacity, with which Sir HENRY HAWKINS advocated the claims of his employer,—I think such a combination of power on the part of claimants' counsel has hardly existed since.

Consider what London was the two generations ago I have referred to, and how it has imperceptibly grown and increased, until, so gorged with traffic, both vehicular and pedestrian, that, as regards the former, it has become so inconveniently great, that nothing but the most careful management of the police would enable, in some parts of the City, the choked vehicular traffic to circulate at all; and, as regards foot traffic, as you are aware, in the neighbourhood of the Mansion House, it is proposed to form subways, so as to remove the real danger which exists in pedestrians passing in this crowded locality from one side of the way to the other. All this has come so gradually that it is difficult to realise the London of two generations ago, when, as I recollect, my nursemaid used to lead me as a child to walk either on Fishmongers' Wharf, which

extended up to old London Bridge, and had willow-trees growing on the river bank, or to Custom House or Tower Wharf, which was then so near the green fields of Essex, that the sweet scent of the new-made hay was wafted from them.

It was some twenty years after the Napoleonic Wars ceased with the battle of Waterloo before any decided start was taken in civic improvements, somewhere about the time the old Houses of Parliament were burned down. London improvements had, however, begun then, but the development has been much greater since, and has certainly furnished, since about 1836, abundant employment not only for surveyors, but for architects also, who since then have had much of old London to rebuild; but while the Surveyor's work in City Improvements can hardly be again what it has been, there still remains much for the architect to do in rebuilding many of the City houses, which for the most part date back to the fire of London in 1666, which still remain, and, although still structurally sound, are unfitted to the requirements of the present time, and unprofitably occupy much valuable ground.

As regards the value of land in London, I do not think it has declined, but it is not so elastic as it was some fifteen or twenty years ago; in the best parts of the City of London it still maintains its value, and, although it has often realised and still does realise £30 a square foot, and has even under special circumstances reached £40, a point it had reached several years ago, there it remains. Of course rentals are high in proportion to the large value of the land, but, large as it is, I believe it does not materially vary from the value of land in the other great seats of commerce and industry, such as Paris or New York; and I was struck, when some years ago I visited Moscow, to find that the land in the great bazaars realised much the same price as in London. The area where these large prices are obtained is very limited in

London, and although at present there is a decided want of elasticity, still, however, as new streets are formed and new or improved lines of thoroughfare opened up, increased values are obtained; but I consider the greatest improvements in value are about the north-eastern parts of the City of London in a line between the City and the vast dock extension which is taking place.

What is, however, most noticeable is the immense development of houses in the suburbs, some idea of which may be formed by considering the District Surveyors' annual returns.

The number of districts into which the area under the control of the Metropolitan Board of Works is divided is 62, superintended by 61 District Surveyors—one District Surveyor, one of the oldest of the body, and elected before the creation of the Metropolitan Board, holding two districts.

The total fees received, which are regulated by the Building Act, vary considerably in amount, the most profitable districts being those which naturally should be so—namely, those suburban districts where a large amount of new buildings of a small class have been erected; the most profitable districts being according to the last return I have before me—namely, that of 1883, which shows that the fees received in the districts of Saint Giles, Camberwell, West Hackney, Hammersmith, and Fulham, were the largest. The district of Fulham producing over £2,000; at the other end of the scale one district being a detached portion of Clerkenwell, near Muswell Hill, produced only £14 3*s.* 9*d.*, and some other districts, namely, the Tower Liberty, St. Martin's and St. Anne's, Soho, East Wandsworth and Tooting Graveney, West Kensington, North St. Marylebone, Whitechapel, Spitalfields, with Mile End New Town, Putney, and Roehampton, produced fees under £300, varying from £117 8*s.* 3*d.* to £286 9*s.* 9*d.*

The number of building operations, including new buildings and alterations to old buildings, was, in 1856, 14,654; in 1883, it was 26,479, as shown by the following statement:—

Year.	Works.	Year.	Works.	Year.	Works.
1856	14,654	1865	19,250	1875	20,283
1857	15,330	1866	20,196	1876	21,910
1858	15,500	1867	21,303	1877	24,288
1859	15,558	1868	21,915	1878	24,529
1860	15,030	1869	19,947	1879	27,271
1861	14,008	1870	18,899	1880	29,249
1862	15,707	1871	18,948	1881	29,275
1863	17,954	1872	18,298	1882	28,519
1864	18,984	1873	17,354	1883	26,479
		1874	19,950		

The year of greatest activity seems to have been the year 1880, when the number was 29,249; the increase in the 27 years from 1856 to 1883, has been in the rates of nearly 14½ to 26½, or considerably over 50 per cent.

The approximate proportion of new works and alterations has been, since 1875, as follow:—

Year.	New Buildings.	Additions and Alterations.
1875	8,607	8,384
1877	10,052	8,930
1878	10,445	8,350
1879	10,710	9,882
1880	11,890	11,258
1881	10,331	11,100
1882	9,852	11,395
1883	8,750	11,100
1884	8,795	11,383

being an average of over 10,000 new houses during the nine years preceding the year 1884. Since then I have no returns to which I can refer. The actual number of building works

as will be seen in comparing the two statements does not agree, but in the list of new buildings, alterations, and additions, the number given is of those only on which fees have actually been paid.

The district which I hold is the district of Clapham, in the midst of which is Clapham Common, the almost classic ground of the THORNTONS and the WILBERFORCES, and of the other leaders of Slavery Emancipation and of the Low Church. Alas, how changed it is! And on the common itself,—one of the fine houses which PETER THE GREAT, when he saw them, considered palaces, is now a Roman Catholic nunnery. There is more than one large Roman Catholic school, and close on the verge of the common rises the elegant spire of a beautiful Roman Catholic church. Many of the fine mansions which surrounded the picturesque common have been pulled down, roads driven through the formerly beautiful grounds on which these old houses stood, and rows of houses built on the sites; a tramway runs from the Borough on to the common itself, and a large number of comparatively small houses have sprung up on its western side.

The tramways on the high-road have spoilt it for carriages, most of the finer houses have gone, and the glory of Clapham is departed.

But the value of the land has enormously increased. Land on main roads which, less than 20 years ago, was not worth more than £1,000 an acre is now worth £3,000, or more. The green lanes, the trim, well-kept gardens, are gone; and rows of small houses, and towering School Board schools now occupy what, 20 years ago, was mainly pasture land. I speak of Clapham because it is the district which I know best; but Clapham is by no means the only suburb which has greatly increased in population and value. I believe that in the Hampstead and Highgate districts the

value of land has risen considerably higher than £3,000 an acre.

What is most remarkable is the immense increase of houses of a small class, and of houses up to £30 to £38 a year in value; indeed, of houses of this class there seems no end.

All this indicates, I take it, a vast increase in the labouring population, and shows a great improvement in the comeliness, comfort, and sanitary condition of the houses inhabited by this part of our population. There is one district, called the Shaftesbury Park Estate, in Battersea, which contains some 2,000 two-storey small houses, which, although not well built, are designed with considerable taste, and are placed in well-distributed streets planted with flourishing trees, forming altogether, to my mind, much more agreeable residences than the more substantial, lofty, stone-stair-cased Model Improved Industrial Dwellings in London, and, I consider, go nearer to realising suitable residences for the poor.

Let me now refer to the works carried out during the last generation by the Metropolitan Board of Works, which was created by the Metropolitan Local Management Act of 1855; and up to the end of 1882 I am, from their published reports, enabled to give an account of the work done by them.

The following-named new streets have been formed or widened:—

		Net Cost, after deducting and allowing for Land sold.
		£
1856	Garrick Street, Covent Garden . .	44,938
1862 & 1864	Southwark Street	249,157
1862	Burdett Road, a new street from Limehouse to Victoria Park . . .	38,204

		Net Cost, after deducting and allowing for Land sold.
		£
1869 1871	Queen Victoria Street, from Mansion House to Victoria Embankment .	1,005,303
1869	Kensington, the widening of High Street	123,323
1865	Whitechapel, the extension of Commercial Road	201,567
1871	Hamilton Place, widening, so as to form a better opening from Piccadilly to Hyde Park	110,767
1867	The removal of Middle Row, Holborn	76,417
1862	Victoria Embankment	1,144,482
1868 1869	Albert Embankment	1,000,692
1874	Chelsea Embankment	279,978
1876	Northumberland Avenue . . .	318,438
1877 1878	Widening of Wapping High Street and Lower East Smithfield—total cost to 31st October, 1876	672,967
1877	Shoreditch, the widening of High Street	170,059
1879	Widening of Bethnal Green Road .	140,393
„	„ „ Willow Walk . . .	390,222
„	„ „ Old Street . . .	701,296
„	„ „ Oxford Street . . .	
1877	Harrow Road, widening at its junction with Edgware Road . . .	154,584
1877*	Newington Butts, widening of street .	8,602
1872	The widening of Stingo Lane, now called Seymour Place, Paddington.	
1876	Great Eastern Street.	
1878	Theobald's Road, from Vernon Place, Bloomsbury, to Gray's Inn Road.	
1879	Clerkenwell Road, from Gray's Inn Road to Goswell Road.	
1879	Appold Street, between Sun Street and Worship Street.	

* The costs above quoted are up to the end of 1876.

1879 Widening of Mare Street, Hackney.
1878 Widening of Goswell Road near the Angel at Islington.
1880 Widening of Union Road, Rotherhithe
1881 Do. of Coventry Street.
1882 Do. of Tooley Street, Southwark.
1882 Do. of Camberwell Road, Church Street, and Peckham High Street.

This body has also contributed to the expense of the recent very important improvements in widening the east end of King William Street (City) Eastcheap, Little Tower Street, and Great Tower Street; and of forming a new street from the southern end of Mark Lane to Trinity Square; and they are at this time engaged in forming a most important line of communication between Regent Circus, cuttings through Rupert Street, Dean Street, and Greek Street, all in the parish of Soho, up to Broad Street, St. Giles.

The great work, however, for which the Metropolitan Board was primarily created was to enable them to carry out a system of main drainage by which the contents of the sewers are prevented from passing into the River Thames within the limits of the Metropolis, and to convey them to points many miles below London.

Of the magnitude of these works some idea may be formed when it is mentioned that it comprises upwards of 80 miles of main intercepting sewers, some as large as 11 ft. 6 in. diameter, and four pumping stations, two on the north and two on the south side of the Thames, and 165 miles of old sewers have been reconstructed, deepened, and covered, at a total expenditure reaching 5½ millions sterling.

The Thames has been embanked in part, and certainly

it is far the grandest embankment which exists, surpassing in many respects the "quais" of Paris, or the embankments of the Neva at St. Petersburg. The cost of this great work and of the new streets, of which I have already given some details, exceeds 10 millions. Amongst the other important works accomplished by the Board is that of rendering the toll-bridges free; a great boon to the public, procured at a cost of 1½ millions.*

All rights in the already existing open spaces such as Blackheath, Clapham Common, London Fields, Hackney, Peckham Rye, and others have been acquired, so that now in and about London the public, of their own freehold right, have access to 1,578 acres of open and for the most part well-planted land, which has been acquired at a cost of nearly half a million, making an aggregate of 10 millions sterling most usefully and beneficially spent on the permanent improvement of our great metropolis, so that we too may certainly boast, as once did St. Paul when speaking of Rome, that we are citizens of no mean city.

Negotiations are, I believe, pending for the acquisition of a further large area which it has been thought desirable to add to Hampstead Heath; but, as the purchase-money required amounted to £350,000, this scheme is for the present abandoned.

Our late respected President gave us, in his opening discourse last year, a most interesting account of the enormous increase in the supply of wheat which we now receive from India, and the low price at which it can be obtained, fully accounting for the fact that the land which has heretofore been used for the culture of wheat has become so

* The works above enumerated and the cost thereof are exclusive of other important works which, during the same period, have been carried out by the Corporation of London, one notable instance of which is the enfranchisement of Epping Forest.

unremunerative, that it has greatly diminished, and indeed in some cases almost extinguished, the rental value of arable land in this country; and although I am not, and never have been, engaged in dealing with agricultural land, yet I hear something about it, and from one of the great institutions at whose meetings I attend, who have been most serious losers by the decrease in the rent hitherto derived from their farms, I am enabled to furnish some statistics of the rise and fall of the rental value of land in Essex, Lincolnshire, Oxfordshire, and Northampton. These statistics are as follows:—

SHOAT'S FARM, STEEPLE, ESSEX.

Acreage.	Term.	Rent.	Fine.
A. R. P.	YEARS.	£	
	1733 to 1736	115	No Fine
	1736 „ 1788	140	„
456 0 17	1788 „ 1805	230	„
	1805 „ 1826	650	„
	1826 „ 1835	480	„
493 0 26	1835 „ 1857	370	„
	1857 „ 1864	630	„
	1864 „ 1871	460	„
473 2 3	1871 „ 1883	550	„
	1883 „ 1885	250	„
	existing tenancy		

Badnock Farm, Asheldham, Essex.

Acreage.			Term.	Rent.	Fine.
A.	R.	P.	YEARS.	£	
			1734 to 1736	80	No Fine
			1736 „ 1737	90	„
			1737 „ 1739	100	„
			1739 „ 1740	in hand	„
			1740 „ 1743	105	„
402	0	29	1743 „ 1761	120	„
			1761 „ 1782	160	„
			1782 „ 1803	175	„
			1803 „ 1824	550	„
			1824 „ 1836	350	„
484	3	18	1836 „ 1848	350	„
471	2	33	1848 „ 1857	430	„
			1857 „ 1860	465	„
491	2	16	1860 „ 1872	530	„
			1872 „ 1884	650	„
538	0	29	1884 „ 1896	300	„
			existing tenancy		

Wrangle Hall Farm, Lincolnshire.

Acreage.			Term.	Rent.	Fine.
A.	R.	P.	YEARS.	£ s.	
194	2	21	1727 to 1745	86 15	No Fine
			1745 „ 1760	86 0	„
			1760 „ 1802	106 0	„
			1802 „ 1806	206 0	„
201	2	18	1806 „ 1823	233 0	„
			1823 „ 1833	300 0	„
			1833 „ 1840	230 0	„
204	2	26	1840 „ 1847	266 0	„
			1847 „ 1859	300 0	„
			1859 „ 1862	445 0	„
211	1	23	1862 „ 1871	470 0	„
			1871 „ 1883	470 0	„
			1883 „ 1895	300 0	„
				first 5 years	
			existing tenancy	350 0	„
				last 7 years	

Wollaston Farm, Northamptonshire.

Acreage.			Term.	Rent.	Fine.
A.	R.	P.	YEARS.	£	
158	1	24	1788 to 1809	170	No Fine
			1809 „ 1830	300	„
			1830 „ 1842	200	„
			1842 „ 1852	220	„
			1852 „ 1862	200	„
			1862 „ 1872	230	„
			1872 „ 1876	250	„
195	1	34	1876 „ 1884	315	„
			1884 „ 1896	220	„
			existing tenancy		

Fryer's Farm, Hatfield Broad Oak.

Acreage.				Term.	Rent.			Fine.
	A.	R.	P.	YEARS.	£	*s.*	*d.*	£
				1553 to 1583	6	3	4	40
				1565 „ 1596	6	3	4	38
				1596 „ 1621	26	13	4	250
				1615 „ 1641	26	13	4	250
				1638 „ 1663	26	13	4	500
				1663 „ 1685	26	13	4	450
				1685 „ 1706	26	13	4	450
				1706 „ 1727	26	13	4	450
	183	3	10	1727 „ 1748	50	0	0	300
				1748 „ 1769	50	0	0	300
				1769 „ 1770	74	0	0	No Fine
				1770 „ 1791	85	0	0	„
				1791 „ 1813	115	0	0	„
				1813 „ 1817	300	0	0	„
				1817 „ 1838	230	0	0	„
				1838 „ 1844	170	0	0	„
Poole's Farm	80	1	1	1834 „ 1844	78	0	0	„
Fryer's „	183	3	10	1844 „ 1846	230	0	0	„
Poole's „	80	1	1	1846 „ 1856	248	0	0	„
	264	0	11	1856 „ 1861	250	0	0	„
	A.	R.	P.					
Fryer's Farm (except 33a. 0r. 12p.)	150	2	38	1861 „ 1873	250	0	0	„
Poole's Farm (except 6a. 3r. 21p.)	73	1	10	1873 „ 1885	280	0	0	„
Part of Great Heath . .	1	3	16	1885 „	110	0	0	„
	225	3	34	yearly tenancy				

HETHE FARM, OXFORDSHIRE.

Acreage.	Term.	Rent.	Fine.
		£	
	1583 to 1604	2	No Fine
	1604 „ 1627	2	£10
	1627 „ 1648	2	30
	1648 „ 1669	4	20
	1669 „ 1690	4	60
	1690 „ 1711	4	60
	1711 „ 1732	4	60
	1732 „ 1753	4	105
A. R. P.	1753 „ 1774	4	160
44 3 21	1774 „ 1789	14	No Fine
	1789 „ 1810	28	„
	1810 „ 1831	92	„
	1832 „ 1842	70	„
	1842 „ 1852	100	„
	1852 „ 1862	70	„
	1862 „ 1872	90	„
	1872 „ 1884	110	„
	1884 „ 1896	75	„
	existing tenancy		

The information which these few facts records is, it appears to me, interesting.

As to three of the farms it is a record of their letting value for about a century and a half.

In Shoat's Farm, Essex, the present rental is much what it was at the commencement of this century, and its maximum value was from 1857 to 1864, when it fetched 25*s.* an acre, and now it fetches a little over 10*s.*

Badnock Farm, Asheldam, Essex, the present value is also apparently what it was in the beginning of the century, its maximum value from 1872 to 1884 being more than double of the present rent of about 11*s.* an acre.

Wrangle Hall Farm, Lincolnshire, its present rental

is apparently what it was about 1857—as in the case of Shoat's Farm, Essex—its maximum value was from 1862 to 1883, when it produced about 50 per cent. more than the present rent of 30*s.* an acre.

As to the fourth farm—Wollaston Farm, Northamptonshire—the present rent of about 20*s.* an acre is two-thirds what it was from 1809 to 1830, when it seems to have dropped 33 per cent., but after a lapse of 34 years it rose again and reached its maximum rental in 1875.

As to two of these farms, there are records of the rents for more than three centuries, namely, in one case, since 1553, and in another since 1583—one of the farms (Fryer's Farm, in Hertfordshire), up to the year 1727, a century and a half ago, was let at small reserved rents and a fine.

And it is curious to note that from 1558, when the reserved rent was £6 3*s.* 4*d.* for a 20 years' lease, with a fine of £40, until the fine system was abolished 216 years later, it rose in 1727 to a rental value of £50 and a fine of £300. The present rent is about the same as it was in the beginning of the century—its maximum rental was from 1813 to 1817, when the rent was nearly three times more than the present rental of about 10*s.* an acre.

The last instance I have is Hethe Farm, Oxfordshire.

From 1583 when the rent was £2 for nearly 50 acres of land, it rose in value until 1774, that is, in 191 years, when the fine system was abolished, to a rental value of £4 and a fine of £150.

Since 1874 its maximum value was from 1872 to 1884, being then about 50 per cent. more than its present annual value of 35*s.* an acre.

Although for agricultural purposes the value of land, as the preceding figures show, has so materially decreased, the case is very different in the value of land required for residential purposes. I have in my mind a district on the

Surrey Hills on the borders of Hampshire, and near to a lofty summit on the old Portsmouth Road, called Hind-head, where some land which, for the last generation or two, has been in the hands of owners who were both unwilling and incapacitated from selling has lately come into the market. It is land of no agricultural value, covered with heath and ferns and furze and the whortle-berry, some oak-scrubs, and a few Scotch fir, which 20 years ago, when obtainable, did not fetch more than £5 or £10 an acre,* now on account of the land having come into the market and the singular beauty and salubrity of the situation realises as much or more than £40 an acre. This is, of course, no criterion of the agricultural value of the land, but rather of the growing wealth of that middle class who are investing in land; and it goes to show that land may have a value outside its value for mere agricultural purposes. This land is more than 40 miles from London. Another instance I may quote of the rise in value—in a district which can hardly be considered residential—is that of a farm of 150 acres, situate between Farnham and Aldershot, about 20 acres of which is hop land, the rest arable fir plantations and some heath land, lately sold for £8,000, or £55 an acre; so there is some value in land still.

During the Session you will have Papers read before you embracing objects of varied interest such as Rights of Foreshore, Copyhold Enfranchisement, Rating of Machinery, Taxation of Real Property. Papers will also be read on another class of subjects such as the Sanitation and Reconstruction of Central London; and I shall have the honour of telling you under what governmental and municipal arrangements a vast development of the ancient City of Rome is contemplated, and is already in great part accomplished.

* One plot of land in the parish of Headley was, I am informed, sold in 1856 at £2 an acre.

Also, on the 7th of next month, when it is hoped that many Country Members will be present, a Paper will be read by a Member on the very practical, but I fear I may almost say the painful, subject of the cost of the production of crops.

Looking to the various measures which, we are informed, will be submitted to Parliament for dealing with property in land, no doubt your serious attention will be given to these measures as they arise.

Several Bills during last Session were introduced into Parliament, dealing with property in land in a manner requiring our gravest attention. There was a Bill ordered to be printed in February of 1884 to amend the Copyhold Acts and to promote the enfranchisement of lands of copyhold and customary tenure, and of lands subject to customary and other incidents of rights, the first clause of which provides that the lord, admitting or enrolling a tenant after the last day of the year, is to give notice of enfranchisement, and in default of doing so the land is not to be subject to fines, &c. Now, this, on the face of it, seems a very arbitrary proceeding, and it is easy to see that it might operate injuriously both to the lord and the copyholder; and, notwithstanding other useful provisions in the Bill, its arbitrary character is a very prominent feature. However, as this is one of the subjects on which we are promised a Paper by one of our Members well able to deal with it, I will say no more about it at present.

Another Bill was introduced, and ordered to be published on the first of December of last year, to facilitate the creation of a peasant proprietary and the acquisition of land by occupiers, under which local authorities may sell small holdings on certain terms. Amongst others, that on the lands so sold, no public-house, and no offensive or dangerous trade shall be permitted, and reserving power to the local authority to repurchase.

It also gives the local authority power to make loans for improvements of small holdings, or to advance money for the purpose of enabling them to purchase their yeoman holdings, to use for public pasture any land owned by them,—on the merits or demerits of which Bill I do not feel competent to offer any opinion. I invite some one of our country Members to tell us at some future meeting what they are. As a London Surveyor, I feel less interest in the measure, except as affecting the general policy of dealing with land, inasmuch as this Bill was not intended to apply to the City of London and all parishes and places mentioned in Schedules A, B, and C to the Metropolis Management Act of 1855.

There is another Bill for the enfranchisement of leasehold building land ordered to be printed in April of this year. This Bill is very short; but I can hardly think it could have been well considered, and it is indeed surprising how any gentleman returned to the House of Commons as a fit and competent representative of his constituents could propound such an unreasonable scheme. What happened with it in the House I do not know; but the Bill provides that any person holding an agreement for a building lease may, at any period during the continuance of the lease, have the power to purchase the fee-simple of the land comprised in the lease, by giving six months' notice of his intention to do so; and that he shall acquire the freehold by payment of an amount equal to twenty-five years' purchase of the annual ground-rent reserved by the lease.

To illustrate the utter unreasonableness of such a proposition, take the case of a lease of which, say, there are only a few years to run. It is no unusual thing that a house may be worth, say, £300, and be held at a ground-rent of £50, or even less. Assume there are five years of the term unexpired. Then, by payment of £50 × 25 y. p.,

the lessee would acquire a freehold house for £1,250, which five years afterwards would be worth £6,000. Such a proposition is altogether too unreasonable.

And observe that, although I am assuming the lessee to give his notice so long as five years before the term expires, if the lessee can do better than invest his money to pay 4 per cent., which is what he does when he redeems at 25 years' purchase, his interest is to defer the enfranchisement until within six months of the expiration of his lease; in which case the difference between the actual value of the freehold and the sum at which the lessee can enfranchise becomes more striking still.

Perhaps, however, the most important Bill as affecting the value of land in the Metropolis is Mr. Broadhurst's Bill, ordered to be printed in October of last year, entitled "A Bill to enable Leaseholders of Houses and Cottages to purchase the fee-simple of their property." The provisions of this Bill having been already very fully considered and discussed in this room, it is unnecessary for me to dilate fully upon them; but seeing the very large support this (in my judgment) dangerous Bill received in the House of Commons, it shows how large a sympathy there exists with the provisions this Bill sought to enact, and we may anticipate that further propositions of a similar character will come under the consideration of Parliament. It has been alluded to constantly in the addresses of candidates for seats. I have not, however, observed any cogent arguments in its favour; the best that one recent candidate, a man of known ability, could urge in support of such a Bill being passed, was that he knew a case where a tobacconist in some suburban district, who, having established a good trade, applied to his landlord at the expiration of his term for a new lease, and the terms asked were so exorbitant, based on the increased trade-value

of the premises, that our industrious tobacconist gave up the shop, which, he states, was forthwith advertised to let—the flourishing trade appurtenant to the premises being set forth as one of the advantages belonging to it; and the orator, being a gentleman of advanced liberal opinions, informed his hearers that the landlord was a noble lord, which we may assume was intended to enlist all their sympathies in favour of a Bill to force the landlord to sell, and in disparagement of the House of Lords. However allowable such remarks may be in electioneering oratory, whilst we can hardly say that analogous cases never do occur, still we know how rarely in real business life such conditions are enforced.

There is another point of view where the leasing system financially produces the best results, and without which many, perhaps most, of the palatial blocks of buildings known as City offices could not have been carried out, nor could the numerous limited liability companies who are the owners, and for the most part the prosperous owners, of these useful and important buildings have been enabled to erect them. These offices are, to a great extent, leaseholds. The lessee takes the ground: he obtains a year's peppercorn to enable him to erect the buildings, and up to that point has no capital to find—the freeholder, who is content with 3 or 4 per cent., has found the capital for buying the land. As soon as the buildings are sufficiently advanced to entitle the lessee to a lease, he can raise a large portion of the money he requires, and if the buildings, when completed, are well let, he may raise, in some cases, all he has actually spent on them.

If his speculation has been a moderately successful one, he may make 8 or 10 per cent. on his actual outlay.

Let us assume the case of a building which costs £10,000; and this is only a moderate-sized building:—

	£ s. d.	£ s. d.
Take 10 per cent. on the outlay as the net rent, that is, per annum		1,000 0 0
Deducting the ground-rent, which we will assume to be a third of the rental value, or say - - -	266 0 0	
Four per cent. interest on borrowed capital of £10,000 - - - -	400 0 0	
		666 0 0
Leaves a net profit of - - - -		£334 0 0

This is perhaps an exceptionally favourable case, but it is sufficient to illustrate the advantages of the system.

The freeholder has got his ground-rent well secured, besides a reversion which grows more valuable every year.

The mortgagor places his money at a good rate of interest.

The lessee, having to find only temporarily a small portion of the capital required for covering the land, earns a profit which would be considerably reduced if he had to find the whole, which he probably never could have done; whereas, with a comparatively small capital to enable him to start the building, he is enabled to make such a transaction profitable.

So I hold the leasing system to be an advantageous system, at least in London.

There is, however, no doubt, a feeling that it is unjust that a lessee who on ground which at the time it was leased was of small value, and on which he had made a large outlay, and whose interest therefore very greatly exceeds the original interest of the lessor in his land, should at any time be deprived of a property which his energy and capital had so largely increased in value. This is a deep-rooted feeling,

and may not be unworthy of consideration; but certainly Mr. Broadhurst's Bill is far, to my mind, from solving the question with any approach to equity.

We have lately heard much of giving every man land. I am not aware that any Bill has been brought in to promote this, as it seems to me, visionary scheme. There is, no doubt, a universal greed for land; land is the most concrete form of wealth. If it be true, as no doubt it is, that the land of every country is the primary source of riches, then there is a sort of *primâ-facie* argument that if land is the source of riches the possession of land gives riches to its owner; but, in fact, "the mere possession of land "is of no value at all without the conditions which render "it a source of profit, and these are numerous.

"Land is an element of nature that renders back with "increase what is put into it; but to obtain any produce at "all many things are requisite—labour, buildings, machi- "nery, manure, seed, stock, all of which require capital or "credit. The owner of land without capital is one of the "most wretched of human beings, for he requires advances "he cannot make, and he has to meet charges he cannot "pay. That is the reason why, in this country, the number "of small landowners has diminished. They found that they "could not make it answer, or that much better investments "were to be had for their money. There is plenty of land "for sale to those who can pay for it, at even a low valuation; "but to be sound and successful such an investment must be "real, and not a thinly-described form of debt or charity."

If I rightly understand it, there is some system of allotment generally prevailing throughout England. I believe this is a good system, and it may be capable of development; but I do not believe that any substantial advantage would be gained by allotting to any labouring man more land than he and his young family can cultivate in their spare time.

Farming is analogous, I take it, to manufacturing: it requires capital, it requires expensive implements and machinery to work it which can only be profitably used on large plots of land.

Against such capital and such appliances as capital commands, no individual efforts can compete.

In my own very limited and quite local experience of landownership, I know of two instances where the ownership of land has gone far to make the owner "amongst the most wretched of human beings," words which I quote from a recent article in the *Edinburgh Review*, called "The Parting of the Waters." In one case the owner, brought up to the tastes and pursuits of a country squire, possessed many hundreds of acres of land, unprofitable land for the most part, with far too small a rental to support his personal expenses; his debts so accumulated, that he has been obliged to part with every acre he once possessed.

He had land in abundance, but he had no capital to work it. In another instance the owner of a considerable acreage of land, born the son of a small farmer, labouring on his father's land, continues to cultivate it; too poor to relax from his daily toil, or to employ other labour than his own, he leads the life of a secluded savage in the midst of his beautiful but neglected and half-cultivated fields.

To these men, and such as these, the possession of land is but a snare and a delusion,—that condition of things which Macaulay describes in his History of England, when, as he says, the yeomanry, an eminently manly and true-hearted race, cultivated their own fields and enjoyed a modest competence without affecting to have scutcheons and crests, or aspiring to sit on the bench of justice, which then formed a much more prominent part of the nation than at present. He says the average income of these small landowners was estimated at between £60 and £70 a year, and

they numbered 160,000 proprietors, who, with their families, must have made up more than one-seventh part of the population.

There is, no doubt, something picturesque and sentimentally interesting in such a state of things, and in the idea of a man living and thriving under his own fig-tree; but, beyond doubt, the prosperity, intellectual progress, and general well-being of the middle-class, to which those sturdy yeomen belonged, and who did so much real good in their generation—and of the labourers who worked for them—has immensely increased since the time of CHARLES II., which is the period to which MACAULAY alludes; and it would be a fatal mistake to relegate the thriving and ingenious mechanic to three acres of land and a cow.

If the views of certain persons were adopted, "land, hereto-" fore considered as the most tangible and secure form of pro-" perty, is to be held subject to such conditions as have actually " been imposed on Ireland—if so why not apply the same " process of reasoning to the National Debt, a form of " property of a much less certain character, and proceed by " similar steps to repudiation? There is no tenable dis-" tinction between any of the forms of capital, money, loans, " funds, land, mills, shops, or trades—to attack one form is " to weaken the security of all the others."

These questions of dealing with land are of the greatest importance and interest; and no doubt, for some time to come, will engage your earnest attention.

Now, addressing myself more particularly to those gentlemen amongst you who, away from the bustle and smoke of our vast city, pass your lives in the country, I have often thought you have before you a vast field of information; and that those who are capable of culling that information in a right spirit may not only derive great intellectual pleasure by doing so, but may apply that knowledge in a practical

and profitable manner. What class of men, for instance, can have such ample opportunity of studying the geology of England. Indeed, it was a Land Surveyor named SMITH who, in the early part of this century, did actually define and map the great geological features of our island; and although, since his time, GREENHOUGH and others have largely added to the details of his map, yet SMITH's Geological Map of England still remains an excellent map of the strata which, cropping out from below, form the habitable and working surface of our country. What can be more interesting, apart from its practical value, than a knowledge of the strata of which our land is composed? What a vast field of interest it opens up to those who care to mark, learn, and understand the wonderful history which the rocks and clays and sands of England disclose to us, containing the wonderful remains, as they do, in the primitive and secondary rocks, of the first forms of vegetable and animal life; until, in the gravels deposited during the latest alluvial action on our globe, the rude implements of prehistoric man, but beyond doubt of man, are discovered!

This is a subject to which those who care to do so, and will read the rocks, is one of profoundest interest; and not only is this a fascinating subject of research, but it has great practical value. The late Sir RODERICK MURCHISON, who had a very special knowledge of the primitive rocks, was enabled to predict the finding of gold in a district where it actually did occur. Those who possess some geological knowledge are not likely to run into the wild speculations for finding coal in localities in which, as geologists, they would know it could not be found. Then, again, a knowledge of the known sequence and composition of strata enables a man to determine as to the probabilities of finding water in particular localities, and the depths at which such water may be found. There may be, and no

doubt are, other practical advantages arising from the study of geology of which I am not aware; but I do know this, that a more fascinating study than that of geology does not exist; and I thoroughly believe that, amongst Land Surveyors, the knowledge of this science is capable of practical and profitable application; and it is a study in which Land Surveyors have a peculiar opportunity of indulging.

So also have you a great opportunity of studying all branches of natural history, always, too, an object of interest, for every insect, every animal, every fish, every shell, which is found on the surface of the land, in our streams and ponds, becomes an intimate and interesting companion, when you know and study its nature; even should you not carry your studies to the same extent as did Professor Huxley, when he wrote that most interesting book on the History of the Crawfish.

Gilbert White was not a Land Surveyor, but he is an illustration of the fund of interest which an inquiring mind may find in all created things around, and how we may find sermons in stones and good in everything.

Amongst other opportunities afforded to Land Surveyors, as I am informed and believe, as we say when making an affidavit, you get the opportunity of field-sport. I, being essentially a Londoner, have no experience of the great pleasure which these sports seem to afford to most men; manly, inspiriting sports, giving energy, quick perception, and action, strength and agility: long may such manly sports be obtainable by, and be the gratification of, the Land Surveyors of England.

Beyond the knowledge derivable from the observation and study of organic bodies, there is at least one other study which, I am sure, must be of great importance with reference to agriculture. I mean a knowledge of chemistry. I have no knowledge of chemistry myself, but I can well understand how a knowledge of chemistry can, in dealing with

the soil, be turned to a most useful purpose. I know, or I am told, that different chemical stimulants, or assistants, are required for a root crop and for a cereal crop; and it is obvious that the being conversant with this branch of science must be of the highest practical value to the farmer, and to the Land-Agent and Surveyor.

When we consider the many tons of produce which may be, and are raised on an acre of land, especially in root crops, it is certainly enough to rouse some inquiry as to how all this weight and bulk of produce has been produced; it cannot be all air, for air is imponderable; the tissue and texture of the bulb shows us it is not all water. What then is it? What does it take from the soil? What can be done to the soil to restore what has been abstracted from it?

These are very interesting questions, scientifically and practically, which must always interest the Land Surveyor.

In the course of the Session you will, as I have said, have before you a Paper on the Cost of Producing various Crops, and which will no doubt deal instructively with the subjects.

This Institution, in its yearly Examinations, calls the attention of the Student to these and to the other topics of interest on which I have spoken. It endeavours to stimulate the naturally inquiring mind of youth, and to afford the means of obtaining that full and competent knowledge which is absolutely necessary for an intelligent and successful practice of our profession.

Gentlemen, I have now finished the annual Address which it is customary for the President of this Institution for the time being to make to you; and, however inefficiently I may have done so, still I have once more set the ball rolling which has been quiescent so many months. May it result in useful information, social intercourse amongst our Members, and an ever higher standard of professional skill and honourable

conduct, not only during this, but for many many Sessions yet to come.

Mr. T. Huskinson (Past-President) said that the resolution he rose to propose would, he was sure, meet with the assent of all present—that the thanks of the Meeting be given to The President for the very able and interesting Address which he had just delivered. The Members had conferred upon him the highest honour which the Institution could bestow in electing him their President, and no one could have heard his Address without feeling that the honour had been extremely well bestowed.

He had listened with much interest to The President's excellent historical sketch of the City of London during the last two generations, and was particularly struck by his remark that all who traversed this great city must feel that they indeed were "inhabitants of no mean city." He must even go further, and say of the nation at large, that they must feel they were subjects of no mean country, and after having had the opportunity he had recently enjoyed of comparing the City of London with New York, Chicago, and some of the principal cities of America, he was much impressed by the enormously superior position which London occupied with regard to them. Even our roads and streets, to some of the more recent of which The President had alluded, compared most favourably with some of their most celebrated thoroughfares like Broadway, in the City of New York. He even preferred our tortuous streets to the monotony of the straight lines and parallelograms which characterise American cities.

But not only was it on land that he had been struck with English superiority—the country was equally supreme, or more so, on the sea. He had the pleasure of crossing over

to America in one of the splendid British steamships, and had found reason to be proud of his country—a feeling which was still further augmented when he went into New York Harbour and saw a fleet of six such ships, plying between the shores of that country and Europe, every one of which was English-built, English-owned, and English-manned.

He had been much struck with The President's remark with reference to Clapham Common—that, although the more modern houses in that neighbourhood were of a class so inferior to those which occupied their position years ago, the actual value of the land had considerably increased. He believed this to be especially the case in Nottingham, with which town he was more conversant; and it seemed to indicate that, whatever adversities may have overtaken certain interests in the country with regard to land, there had been an extraordinary accumulation of capital in the hands of the middle-class, tradesmen and artisans, and a corresponding demand for houses worth a rental of £30 or £40 a year, and which had raised the value of the land adjacent to the principal towns to a higher price per yard than it would yield if occupied by houses more pretentious and occupying somewhat larger areas.

The depression which had overtaken agricultural land had, no doubt, been extremely severe and very widely diffused, and though at present he saw no immediate prospect of improvement, he was confident it would not be long deferred; but he hoped to be afforded the opportunity, on some future occasion, of submitting to the Institution some of the impressions from his visit to Canada and America. He believed that those countries could not now long sustain a successful competition with us in respect of our wheat and cattle. As to wheat, he was convinced that we had already seen the worst of it; and as to cattle, there was no fear for

the future. Altogether he felt confident that, before long, we were destined to see a considerable improvement as regards the interests of agricultural land in this country.

Mr. A. Garrard (Fellow) said it gave him great pleasure to second the vote of thanks. He had listened with great interest to The President's remarks, especially to that portion of them which referred to matters connected with the growth of London, with which he (Mr. Garrard) was more particularly conversant, and which had, he thought, been even more rapid than appeared from the returns quoted in the Address, which did not comprise the statistics from outlying districts such as Hornsey and Willesden—the growth had been enormous during the last four years.

The vote of thanks having been carried unanimously, and briefly acknowledged by The President,

The Meeting adjourned.

Paper 133
No. 226

THE COPYHOLD ENFRANCHISEMENT BILL, 1884-5.*

By EDWARD SMYTH (Professional Associate).

Read at the Ordinary General Meeting of The Surveyors' Institution, *Monday, November 23rd,* 1885.

THE PRESIDENT (MR. E. I'ANSON) IN THE CHAIR.

This Bill, which was designed to be the concluding chapter in the long history of Copyholds of Inheritance, has a history of its own, in which there is, just now, a pause after a singular catastrophe. A brief record of proceedings during the past five years may be shaped to serve also as a statement of the chief features of the Bill. This has been styled a "hardy annual"; its reappearance may safely be predicted, and the threatened heavy addition of fifty-four sections to the mass of statutes upon the subject of copyholds is one which deserves some serious attention.

Dissatisfied with the existing law, which puts it in the power of either the lord of the manor or the copyhold tenant to bring about an enfranchisement, and wishing that enfranchisement should be made compulsory on both, Mr. Waugh introduced a Bill in 1881, a leading and noteworthy provision of which was that if a lord, when admitting a tenant, should fail to deliver to him a notice to enfranchise, the land should, by virtue of such admittance, become enfranchised and discharged of all manorial payments, and the lord should have no reserved right whatever, and no

* A Summary of the subjects dealt with in the Paper will be found on page 84.

claim for compensation in respect of such enfranchisement. So a merely clerical oversight, into which an agent might be betrayed in the course of an interview, would have had the effect of annihilating the property of the lord. Although this Bill was, after debate, read a second time, it was withdrawn at a late period of the session.

In 1882 a very similar Bill was introduced, but containing a provision as to minerals, which has, however, disappeared from subsequent editions of the Bill, and to which a reference will presently be made. This Bill was discharged 26th June; and a motion for leave to introduce, on the same day, an altered Bill was refused for want of notice.

In 1883 a Bill upon the subject was again brought in by Mr. Waugh, but made no progress.

In 1884 he reintroduced the Bill; and this was read a second time in the month of March, and was referred to a Select Committee, who reported the Bill, with amendments, to the House in May.

Early in the following autumnal session the Bill was again brought in by Mr. Waugh, substantially as it had been returned by the Select Committee; and in the present Paper the clauses of this Bill will be quoted as in the print ordered by the House of Lords on 17th July, 1885.

The sweeping provision above-quoted from the Bill of 1881 had been reduced in subsequent editions to one which gives to the lord (Clause 1) a twelvemonth, subsequent to admitting or enrolling a tenant, within which to serve upon him a notice to enfranchise; and it imposes upon the lord, if he should fail to do so, the loss of all further fines, reliefs, and heriots on subsequent admittances, and the payment of almost all the expenses of any future enfranchisement. The intention thus indicated of enforcing enfranchisement upon those lords and copyholders who show no wish to avail them-

selves of their existing powers to enfranchise, had commended itself to the Select Committee; and not only so, but that Committee had added to the Bill an imperious clause "for accelerating enfranchisement by manors." Under this the lord of a manor, or any five of the tenants, might apply to the Land Commissioners to declare that the whole of the tenements of the manor should be forthwith enfranchised; which declaration the latter, if they saw fit, should make unless one half of the tenants objected to such a course. A member of that Committee was Mr. Elton, who is naturally looked to for guidance on the subject of copyholds. I must therefore own an apprehension that want of care may have prevented my understanding how it is that he should have moved, on 12th March, 1884, the rejection of the Bill before it was referred to the Select Committee, and yet that he should be reported to have stated, on 19th February, 1885, that he gave to what I am obliged to call the amended Bill, but what was really a far stronger measure, his "cordial approval." Objections which he made to the Bill on the former occasion seem to have been at least equally applicable on the latter. He had objected (as did other members of the House of Commons, both in 1881 and 1884) that "the "enfranchisement clause was unnecessary, inasmuch as a "vast amount of enfranchisement of copyholds had taken "place, and was taking place"; that objection applied still. He had objected that "when the fines were fixed, either by "Act of Parliament, by decree, or by custom, he thought "the copyhold tenure ought to be allowed to remain"; that objection applied still. He had objected that "the Bill "threw the initiative on the lord of the manor, and there "were no valid reasons for making him the operating party"; and that objection applied still. Some reasons, which strike me as wholly inadequate, have been advanced in favour of the Bill; and after it was read a second time in 1885 in the

House of Commons, I discussed those reasons in a professional newspaper, through the courtesy of its Editor, at a time when this Institution had just borne with me in a Paper upon the inconsistencies of the recent legislative interference with agricultural drainage rents. I relegate that discussion to an appendix; and this will be found interesting through its containing a Report of the Commons Committee of 1838, which an honourable member, much concerned for the progress of the Bill, brought forward against me as a reply.

With the endeavour to obtain adequate discussion of the Bill, it was blocked by Mr. Halsey; but it passed into Committee on an exceptional occasion, and reached the Upper House. At the instance of Mr. Elton, the imperious clause above-mentioned had, however, been altered in Committee by leaving out its pageful of subsections, and inserting, instead, another pageful, according to which several copyholders might enfranchise under a single Award, and for a consideration to be fixed by the Land Commissioners themselves; but the "five or more tenants," with whom both the original and the new clause (51) start, become under the latter as harmless as under the former they would have been meddlesome and despotic.

Lord Hobhouse, in moving on 30th July, 1885, the second reading of the Bill by the House of Lords, admitted that it was not so clear in arrangement or expression as could be desired; and he then proceeded to refer to the early clauses of the Bill. Clause 2 directs the lord to accompany the notice to enfranchise with an offer to take a sum of money as the consideration; and if he fails to do so, or names too large a sum, he incurs (under Clause 4) the penalty of proportionate expenses. By Clause 3, if such offer is either not made, or not accepted, the lord and tenant are to be at liberty either to agree on the compensation, or,

without reference to the Land Commissioners, to appoint a valuer or valuers to fix it; this is just what they can do now. Clause 4 provides that if the compensation for enfranchisement should not have been ascertained under some of the above provisions within six months after the notice of enfranchisement had been delivered, "then *on "the application in writing of the lord or tenant*, the same "shall be ascertained in the manner prescribed for the case "of failure to agree by the Copyhold Act, 1858," and the enfranchisement shall be completed by Award. The words which I have put in italics I find to appear for the first time in the Bill of February 1884; and doubtless they were introduced without the faintest apprehension of their proving fatal. Lord HOBHOUSE intimated that, if he rightly interpreted the Bill, the lord's original notice did not compel the tenant to go on with the enfranchisement. I think it was Lord BRAMWELL who, in opposing the Bill, said that this interpretation would be a great disappointment to the promoters of the measure. Earl STANHOPE, who had a notice on the paper to refer the Bill to a Select Committee, then altered his motion to one for its rejection. The Lord CHANCELLOR (Baron HALSBURY) spoke to the effect that, seeing the noble and learned lord in charge of the Bill did not seem to have satisfied himself as to whether it was compulsory or permissive, or indeed differed from the law as it stood, no object would be gained by reading the Bill a second time so late in the Session. It was rejoined—probably as a forlorn hope—that if the initiative were just put upon the lords of manors, as intended by the Bill, many tenants would carry on enfranchisements as to which they were too indolent to take the first step themselves; but Viscount CRANBROOK observed (with an apology in the presence of the Bishop of LONDON) that the measure seemed to be an illustration of "faith without works." Earl

Stanhope's motion for the rejection of the Bill was then carried by 46 votes to 14.

But supposing it to be again sought that every copyhold shall (as had been intended) be enfranchised, regardless of wishes of both lord and copyholder to the contrary, what provision will the promoters introduce into the Bill to ensure the lord's pressing on the enfranchisement, particularly if he chance to be a lord who has omitted to give the notice? Punishment by forfeiture of further profits and the imposition of costs will have been exhausted upon him already, and with the incongruous result of constituting a piece of luck for the copyholder. But for what purpose are any penal terrors to be invoked? Just to insist upon both parties entering into an arrangement which each of them is already empowered to require at any time that he may deem the benefit to be worth the attendant cost! It is not surprising that the promoters of the measure should have been able to strengthen their case by few, if any, petitions in its support.

It is asserted that the abolition of copyholds is necessary to a general scheme for the registration of the ownership of land. In so far as such scheme is to consist of the identification of a property by map and terrier, the grants upon the Court Rolls afford as good an opportunity as can any other document for the recording of that identification. In so far as such scheme is to consist of a continuous record of legal ownership, this is already provided in the Court Rolls by a complete system which is nowhere else to be found, and which will admit of being easily merged in any universal mode of registration. The present proposal to insist upon a destruction of the copyhold system before any system is in successful operation for freeholds, is surely one of those oddities which seem incidental to enthusiasm.

It has, indeed, been several times stated that the Bill is

favoured by the Incorporated Law Society, and by some stewards of manors; but suggestions have been very freely made, on both sides, that solicitors and stewards have interests in the matter over and above those of the lords and copyholders. Opponents of the Bill have spoken to the effect that solicitors can have no objection to the legal business of the copyhold property throughout the country being transferred from the hands of the stewards to their own. But stewards themselves are assailed by both parties. Stewards approving of the Bill are said, by its opponents, to do so merely because they cannot look with dissatisfaction upon a large and immediate run of luck in the shape of compensation upon enfranchisements. On the other hand, stewards disapproving of the Bill are visited with Mr. Waugh's censure, in the *Times* of 23rd July, that their real objection is the certain extinction of their fees, which he described as even more devouring than in the days of one Roger North.

Now, a greater or less amount of costs is incidental to either the holding or the transfer of property of all kinds, and not merely copyholds of inheritance. The present expenses attending an enfranchisement are the reason assigned for a supposition that copyholders want to enfranchise, although omitting to avail themselves of their power to do so. But if the enfranchisement costs, without being unduly transferred to the lord, should be reduced to the lowest practicable amount, we may feel a reasonable confidence that tenants, as a whole, will not be deterred from enfranchisement when their interests would be served by changing the tenure. If such change would not advance the interests of either lords or copyholders then remaining, it is difficult to see how it would advance the interests of the public; but whenever the public might be persuaded of the latter, it would seem only honest that, in any subsequent

enforcement of enfranchisements, the public should take the costs upon themselves.

Costs of Enfranchisement.

By Clause 35 the existing arrangements as to costs are maintained "in every case of enfranchisement by award prior to the next admittance or enrolment."

Stewards.—The carrying out of an enfranchisement by agreement, under the Bill, is to be simplified by the adoption of a short form of "Memorandum of Enfranchisement," which by Clause 17 is to be entered upon the Rolls, and to have the same effect that an Award has in the case of a compulsory enfranchisement. By Clause 18 the tenant, having paid to the steward the compensation scheduled in the Bill, is to be entitled to a certified copy of such "Memorandum." That compensation is proportionate to the amount of the enfranchisement-money; and the Schedule further states,—"the above compensation is exclusive of "stamps and paper or parchment or map or plan which "are to be paid for by the tenant."

Such mode of completing the enfranchisement by a "Memorandum" has, seemingly, much to recommend it; and our Members of the legal profession could tell us whether it might with advantage be made applicable to the enfranchisement of lands by Agreement arising under existing Acts.

Land Commissioners.—Clause 33 provides (with exceptions) that the Commissioners' fees in respect of enfranchisement by Award under the Bill shall be payable, half by the lord, and half by the tenant; and Clauses 34, 46, and 47 leave it substantially to the Commissioners to charge

how they please their costs for extra matters with which they may have to deal.

Among such matters it is to be observed that by Clause 28 the Commissioners may with the consent of lord and tenant, and by Clause 51 without the lord's consent, advance beyond their administrative functions, and undertake the technical or professional work of being valuers also.

Valuers, &c.—Clause 6 proposes extension and alterations of the 8th section of the Act of 1858, which made provision for enfranchisement of properties rated to the poor at not more than £20 net. The regulations as to valuers' charges in such Clause 6, and the provisions before referred to as penal upon the lord, seem to be exceptions to Clause 46, which is to the following effect:—In every case of enfranchisement by award under the Bill each party shall pay his own valuer, solicitor, or agent, and witnesses (if any); and the expenses of the umpire, and of a sole valuer, shall, if the Commissioners see fit, be borne equally by lord and tenant.

Under the present law the party giving the notice to enfranchise, and who may, therefore, be concluded to seek benefit from it, has to pay the costs of both valuers. I think this is reasonable in the case of a lord voluntarily serving the notice; for he can scarcely be said to be a sufferer from copyhold tenure, and such action often leads to a loss of income regretted by the existing copyholder, particularly if the land has an immature building value which the present holder cannot therefore enjoy. On the other hand, it has always appeared to me to be rather hard that the tenant, who, in certain cases, is a sufferer under copyhold tenure, should, when giving notice to enfranchise, be now bound to pay the lord's valuer; for, as copyholder, he has not to pay the lord for the settlement of the amounts of fines on renewals, and

of other manorial profits, which settlements the calculations for enfranchisement supersede.

Clause 8 provides that the Commissioners shall fix a scale of allowance to valuers for services under the Copyhold Acts. This is not necessary, however, for enforcement in the case of charges to be borne by the valuer's own client, which should accordingly be a matter for private arrangement. And, as regards charges in other cases, I think we may do well to protest against the standard of three guineas a day and expenses, which is familiar to many valuers whose charges have been taxed by the Commissioners. In a possibly official schedule, included in the Proceedings of the Select Committee of 1884 (and hereafter to be discussed), there stand the words, "Valuers' Charges:—not exceeding three pounds per day, and personal expenses out of pocket." The charges generally for Surveyors' valuations have reference, by common consent, to the values of the properties. A scale which, on the other hand, has regard to the length of time occupied, involves waste of work in recording the details of the services, and gives an opening for possibly querulous taxation as to whether less time, and fewer letters, or fewer interviews, ought not to have sufficed. Even in the carrying out of sales and purchases by solicitors, where, through specialities of title—sometimes simple and sometimes most complicated—so much can be advanced in justification of payment in respect of time, solicitors are now expected to charge by commission on the price. It would be only reasonable that any official scale for the payment of valuers for enfranchisements (apart from occasional questions of disputed identification) should also be a commission scale, but with additional charges for any plans, and a small fee for attending a possible umpire. Such an arrangement would, I imagine, be less irksome to the Commissioners themselves, and a charge proportionate to the enfranchise-

ment-compensation is, indeed, the basis of the payments now made to their own office in such cases as may pass through it.

Form of Compensation for Enfranchisement.

Clauses 12, 13, and 16 of the Bill provide that the compensation to the lord under the Acts, in every case of enfranchisement by memorandum or award, shall consist of a fixed annual rent-charge, equal to 4 per cent. upon the compensation-money, and to be payable half-yearly, and be redeemable for twenty-five years' purchase at the option of only the payer.

From the frequent smallness of the rent-charges thus substituted for occasional fines and heriots, the collection forced upon the lord would be costly to him, and might sometimes have to be given up altogether. At the present time, if the lord chooses to serve a notice of enfranchisement, any disadvantage of rent-charges is thrown upon him, and rightly so, for reasons before-mentioned in connection with his payment of the tenant's valuer in the like event. But when it was intended by this Bill that the lord should be forced to serve a notice of enfranchisement, it would, I think, have been reasonable to have further required that a tenant holding at fines-certain (which are commonly so small) should pay down the compensation in one sum, seeing that in such a case it is only so small a part of the value of the freehold. A copyholder holding at other fines may sometimes be deterred from enfranchising by the costs of borrowing money; and he should, I think, be now empowered to enfranchise by payment of a 4 per cent. rent-charge, if he so wish; but this is a widely different proposal from that of the promoters of the Bill, which is that he shall be compelled to do so whether he wants an enfranchisement or not.

Let me add a further suggestion, that the commutation

which can now be effected, when lord and tenant agree, should be obtainable, at the tenant's option, in respect of fines-arbitrary and of heriots in kind; he paying an annual rent equal to 4 per cent. upon such sum of money as would be, at the time, the proper consideration for an enfranchisement from such liabilities. This would meet the case of tenants disliking those variable incidents, but liking the tenure by copy of Court Roll.

Rights Reserved in 1852 Act, Section 48.

Sporting.—It is proposed by Clause 29 of the Bill that the lord's sporting rights, which are now not affected by an enfranchisement unless with his consent, shall (with the exception of fishing) be no longer exempted from the operation of enfranchisement.

By Clause 30 such sporting rights upon any allotted or enfranchised lands of a manor would be the subject of an enfranchisement if desired by either the landowner or the owner of the rights; and in the Bill, as returned by the Select Committee, they had inserted,—"For the right to "sport and kill game, etc., from 1*s.* to £1 per acre statute "measure," as terms for enfranchisement.

Minerals.—In the version of 1882 of the Bill under consideration, a clause (36) appeared, securing to the lord the rights to search for and carry away minerals belonging to him in lands enfranchised, he making full compensation for the exercise of such rights and for all injury; this compensation in case of dispute was to be settled by arbitrators, who should have due regard to the customs. In a little work published in that year by Mr. Elton he objected that this clause would compel the copyholder to a gratuitous surrender of his usual possessory power to prevent the lord's

working the mines and using the surface. I should otherwise have supposed that the stipulated regard to the customs would have ensured to the copyholder a compensation in respect of his obstructive power, and not merely payment for actual damage.

An objection to the clause was made in a contrary direction, and to the effect that it would give to the copyholders surface-compensation to which they were expressly disentitled in the case of allotments under many Inclosure Acts.

The clause has disappeared in later editions of the Bill; Mr. Waugh's explanation in the House, on 12th March, 1884, being that he did not propose to meddle with the minerals at all, and regretted having, in a weak moment, introduced a clause on this subject into the Bill of 1882.

But there is no provision more strongly needed than one which should remove the difficulty as to minerals; this is, however, a difficulty of copyhold tenure, and is hitherto irrespective of copyhold enfranchisements because the law upon them has left the difficulty untouched. The only course which occurs to me with regard to minerals is that, whenever lord and tenant differ as to how these or certain of them shall be dealt with on an enfranchisement, either party should be at liberty to refer to the Land Commissioners to say what minerals, with specified rights of winning them, shall be vested in the tenant and the lord respectively. The Commissioners could govern their decision by a regard to the nature and position of the minerals in question, and by the circumstances of the ownership of other such minerals in surrounding lands. The aim would be that the workings throughout a large tract shall be facilitated by simplification of ownership; and the respective rights, whether of working or of obstruction, possessed by either party, and to be acquired by the other, would be the subject of valuation.

In any cases in which lord and tenant are now unable to agree upon terms for the working of minerals under lands which either are copyhold, or have been enfranchised with mineral reservations, the tenure would cease to be an obstacle if it were thus put in the power of either party to require that the minerals shall be dealt with by an enfranchisement in the above way.

Calculations of Compensation for Enfranchisements, as appearing in the Proceedings of the Select Committee.

Clause 8 of the Bill was introduced by the Select Committee, and must be here quoted in full :—

"8. The Land Commissioners shall, as soon as con- "veniently may be after the passing of this Act, make and, "by order under their common seal, publish a scale of "compensation between lord and tenant for the enfranchise- "ment of land from the manorial and other rights and "incidents specified in the Copyhold Acts, including this "Act (founded upon their experience), together with all "necessary tables and directions, and, in the case of arbitrary "fines, referring to the gross estimated rental of land assessed "to the poor rate for ascertaining such compensation, and "also for formulating a graduated scale of money payments "for heriots; and such scale shall be used for the guidance "of the valuers, except in cases where there are special "circumstances, which, when they occur, shall be particu- "larised in the valuation; and the said Commissioners shall "also fix and, by the same order, publish a scale of allow- "ance to valuers for services to be performed in the execution "of the Copyhold Acts, and the Commissioners may from "time to time by like order vary, alter, or amend any such "order as aforesaid."

On the subject of calculations for enfranchisements, there

was considered by the Select Committee a proposed schedule entitled "Scale of Compensation between lord and tenant," and appearing in their report as unconnected with any of the members; a part of it was, until the last stage in the Commons, appended to the Bill itself. From such production of that schedule, and its general correspondence with the Commissioners' ordinary practice, it may be taken as an indication of the nature of the "scale of compensation between lord and tenant," which would, under this Clause 8, be produced as that which "shall be used for the guidance of the valuers,"—a periphrasis for the scale which "the valuers shall use." Permit me, therefore, to discuss the successive items of such schedule; but first to offer an observation upon the reference made in this clause to the parochial assessment, and which appears also in item 10 of the schedule.

Annual Value of Copyhold Tenement.—It will constantly happen that a copyhold tenement is not separately assessed to the poor-rate. In such cases the only way of having the stipulated regard to the assessment would be that the valuer for each party shall value the entire holding, in order to apportion the "gross estimated rental" between the freehold and the copyhold parts; so that, instead of saving work, the work would be increased. Even where the copyhold tenement does happen to be identical with a holding which is separately rated, the assessment does not indicate whether or not (especially as in building land) there are advantages to arise from the enfranchisement, which advantages the Act of 1852, Section 16, requires the valuers to take into account, and which are seemingly among the "special circumstances" alluded to in the clause.

Fines-Arbitrary.—The Compensation Scale before the Select Committee states:—

" 3. For fines-arbitrary on alienation or death of tenant " from three to five years' improved annual value of the " tenement according to the age of the tenant."

The Official Table.—The above are just the limits of the Official Table of 1855; but although the Select Committee, by rejecting the schedule, have abstained from recommending in so many words that such Table shall be made obligatory, this would yet be the effect of the provision in Clause 8 that the Commissioners' scale is to be founded upon their " experience." It is certain that such Table must have been adopted in an enormous majority of those enfranchisements, which happen to have been carried out through the Commissioners' Office, but which have, however, been variously estimated at only from one in a dozen to one in five of the total enfranchisements in the country. Valuers who may not have felt a necessity for their investigating the subject (and umpires especially) have naturally adopted this Table, which has been continuously issued from the Copyhold Department, although never issued as obligatory upon either party, and indeed bearing of late a manuscript note to that effect. And even where lords' and tenants' valuers have come to an agreement upon the total compensation,—a point which is commonly reached without the settlement of every detail,—such total sum would, if a valuation had to be subsequently submitted to the Commissioners, be cut up into parts in such a way as should be the most agreeable to the official eye. The basis of " experience " stipulated for the proposed " scale of compensation " would therefore compel the Commissioners to make a virtual reissue of that Table; only what might have the appearance of a complete confirmation of it would be nothing but its veiled reproduction. We cannot for a moment suppose that the present Commissioners have got no further in the apprehension of this matter than the *pis aller* of their predecessors of 1855; yet, if the parenthesis " (founded upon their experience)" were to stand in any such clause, it would have the cruel effect of compelling the Commissioners by a sealed order to imply that their experience, instead of being that which proverbially teaches, had, like that of the Bourbons, led them neither to

learn anything nor to forget anything upon this branch of the subject, and compelling them to govern in the same fashion. It is as though copyhold enfranchisement were the single subject in which nothing remained to be learned, nor any past work to be improved.

Subjoined is the Official Table of 1855, which may here find a fitting record in the "Transactions" of this Institution.

Enfranchisement of Ordinary Copyholds of Inheritance subject to Arbitrary Fines.

Table *showing the Number of Years' Purchase on the * Net Annual Value of Property proposed to be Enfranchised in respect of Fines.*

Age of Copyhold Tenant.	Number of Years' Purchase.	Nearest Value in Sterling Money. £	s.	d.	Age of Copyhold Tenant.	Number of Years' Purchase.	Nearest Value in Sterling Money. £	s.	d.
20 *or under 20*	3.000.000	3	0	0	46	3.700.332	3	14	0
					47	3.751.010	3	15	0½
21	3.011.938	3	0	2¾	48	3 802.532	3	16	0½
22	3.022.666	3	0	5¼	49	3.853.841	3	17	0¾
23	3.033.185	3	0	7¾	50	3.905.266	3	18	1¼
24	3.044.470	3	0	10½	51	3 956.733	3	19	1½
25	3.056.761	3	1	1½	52	4.008.130	4	0	1¾
26	3.071.101	3	1	5	53	4.059.671	4	1	2¼
27	3.087.629	3	1	9	54	4.111.253	4	2	2½
28	3.105.529	3	2	1¼	55	4.162.803	4	3	3
29	3.125.330	3	2	6	56	4.213.388	4	4	3
30	3.146.782	3	2	11	57	4.264.790	4	5	3½
31	3.169.810	3	3	4¾	58	4.317.596	4	6	4
32	3.194 521	3	3	10½	59	4.371.464	4	7	5
33	3.221.105	3	4	5	60	4.426.120	4	8	6¼
34	3.249.669	3	4	11¾	61	4.481.597	4	9	7½
35	3.281.621	3	5	7½	62	4.537.232	4	10	8¾
36	3.314.487	3	6	3¼	63	4.593.613	4	11	10¼
37	3.347.914	3	6	11½	64	4.651.009	4	13	0
38	3.380.887	3	7	7¼	65	4.709.629	4	14	2¼
39	3.415.715	3	8	3¾	66	4.768.830	4	15	4½
40	3.449.796	3	8	11¾	67	4.828.345	4	16	6¾
41	3.485.073	3	9	8¼	68	4.887.679	4	17	9
42	3.522.686	3	10	5¼	69	4.945.469	4	18	10¾
43	3.562.511	3	11	3	70 *or upwards*	5.000.000	5	0	0
44	3.605.401	3	12	1½					
45	3.651.564	3	13	0¼					

* In estimating the Net Annual Value, no deduction should be made for Land Tax, but the quit-rent ought to be deducted, and where there are buildings, an allowance should be made for repairs.

The Land Office, 3, St. James' Square,
7th February, 1855.

*** The parts in *italic* were first introduced in a reprint in 1870.

LONDON UNIV

When I was allowed to state to this Institution, in 1870, Mr. Rouse's and my own objections to this Table, the then Accountant to the Commissioners read a statement containing an intimation that the Table had been "prepared by the "Government Actuary, under the direction of the Copy-"hold Commissioners, after much consideration on their "part." I will confess to a moderate depression of spirits upon the announcement of such distinguished actuarial authorship; but consolation came to me speedily from two very distinct sources. The one was my happening to observe a London establishment in which a respectable amount of business appeared to be carried on in what were described on the brass plate around the shop-window as "Mis-fits by eminent tailors." The other was the fact of the Table bearing no actuary's signature, nor the smallest evidence of what would deserve to be regarded as actuarial skill. I cannot conceive the Actuary to the Commissioners for the reduction of the National Debt,—conceive him if you can,—sitting down to master the subtleties of the incidence of copyhold fines, and then assigning monetary values for the enfranchisement, and doing all this as the anonymous clerk of a department to which he owed no allegiance. When quite new to their work, the early Commissioners had taken the sensible course of learning from stewards the terms commonly required as compensation for enfranchisement from such fines, and had published the result as being "four to six years' value." But as this was when the tenants had no power to compel enfranchisement, the Commissioners of 1855 doubtless concluded that three to five years' value would be a fairer rate of charge. The assignment of these almost empirical values to the ages 20 and 70 respectively, is the essence of the Table, and was no doubt the result of the not unreasonable "consideration" by the then Commissioners; but the work so remaining for

the Government Actuary was merely the selection of an annuity table, and the corresponding computation of the values for intermediate ages by some junior clerk who could be trusted as far as the Rule of Three. Whether such interpolation to six decimal places is warranted by any existing mortality observations, it would be rather outside the province of this Institution to discuss; but certainly the publication by the Commissioners of 1855 of an array of so many decimals, in a matter entangled with fines on alienation, can have had no practical value, though it may have inspired with reverential awe the breasts of the innocent.

It is impossible to regard as exact the further statement that the Table was (in some undemonstrated way) based upon the principle that it would be equivalent to a fine of two years' value about every fifteen years. The value of a series of fines, assuming the first fine to be now payable, is the rudiment of any proper calculation, as was pointed out by Mr. Rouse; and that principle of construction would have been available for the assignment of values to ages under 20 and above 70. Instead of this, the Commissioners seem, from the absence of it, to have felt themselves in the predicament of afterwards directing no reduction of charge in the former, and (which is more important) no increase of charge in the latter; so that, while the values in the Table are given for all years of age between 20 and 70 with a degree of nicety that enables us to interpolate a distinct value for every hour of intermediate existence, it treats all the days and years of human life beyond 70 as needing no consideration at all.

Variety of Intervals between Fines.—The greatest demerit of the Official Table is that which was originally indicated by Mr. Rouse, in his Copyhold Enfranchisement Manual; namely, that it assumes the fines to be receivable with equal

frequency in all manors. This does, indeed, give to it the charm of simplicity, for those who do not care to think of the point, but such an assumption causes a table to be unjust, sometimes to lords, and sometimes to tenants. Mr. Rouse inserted a table professing to give the present value of the series in perpetuity of fines-arbitrary assuming a fine of two years' value to be payable at once, and which, for perspicuity, I may call the "Immediate Series" of fines. This table is for six fine-intervals, there being between the longest and the shortest a difference of five years. Although he unfortunately weakened the effect of his objection by setting out a detailed table for every year of age in only the cases of 15 years' interval for lands and 13 years' for houses, it will yet have been noticed by careful readers of his work that he gives a rule, and auxiliary table, for ascertaining the allowance which he had made for an existing tenancy at any age, and which he directed to be similarly deducted from the Immediate Series for any other fine-interval that might be deduced from the Court Rolls of a particular manor. If this important difference in the frequency of alienations in various manors was thus manifest to a barrister, it is unlikely to be willingly ignored by those Surveyors to whose minds there is continually present the greater or less demand for, and consequent change of ownership in, properties, according to their distance from centres of population. The ample materials in the office of Messrs. Clutton—to whose practice I have been primarily indebted as regards all the salient points in copyhold enfranchisement—allowed of my making cautious selections in order to define with fairness the respective lengths of fine-interval to be expected in the different classes of localities mentioned in the "Transactions," Vol. II., p. 146. It was satisfactory to find those results to be in very natural accordance with the first, fifth, seventh, and ninth columns,

respectively, of my enfranchisement table; the third column being therefore applicable to the neighbourhood of ordinarily progressive towns. In the more detailed table appended to the present Paper, the columns are headed accordingly; and each of the second, fourth, sixth, and eighth, of them, stands as a fitting compromise in cases of doubt as to which of two proximate classes of locality should be regarded as the more suitable to a particular copyhold. Such results of the examination of Court Rolls is seen to be a difference of eight years between the two extreme fine-intervals; that in the neighbourhood of the Metropolis being about 12 years, and that in a retrogade district being about 20 years. The latter, or longest, interval arose in a district in which the population had decreased about 10 per cent. during the period of observation, and it would therefore be rarely applicable; and for any who may imagine the former interval to be suspiciously short, I may allude to a populous locality referred to by Sir Gabriel Goldney in moving the rejection of this Bill in the House of Commons, on 6th April, 1881, his statement being that in two large parishes and districts known to himself, with about 2,500 copyhold tenants in each, the "property on an average passed from "hand to hand either by death or by sale once every "11½ years." Now the difference between 12 years and 20 years in fine-interval may be seen, from the common rule for summing a diminishing geometrical series, to occasion (if we assume 3 per cent. compound interest) a variation of about two years' purchase in the value of the Immediate Series of fines, and even the difference of from only 15 to 16 years—a single year—occasions a variation of about a quarter of a year's value; and these variations would arise on the smallest enfranchisement. Yet the Official Table ignores all differences of the kind, though affecting a degree of accuracy indicated by that sixth decimal figure which

would have an appreciable effect in a single enfranchisement of an entire county.

Allowance for Existing Tenancies.—This is a far more difficult question. If the ages of copyholders were recorded upon their admittances as tenants, their ages at their alienations or their deaths could be traced; and the construction of a copyhold-annuity table might be effected in a manner analogous to that of a life-annuity table. In the absence of such records, I had argued before this Institution, in 1870, that the tenancy of average duration, and for which a single fine must therefore be the appropriate allowance, cannot be indicated by an age so young as that of the best life, to which Mr. Rouse had assigned this deduction from the Immediate Series, and the age selected by me, as about correctly representing the tenancy of average duration, was 35 (Vol. II., pp. 84-5). Whatever may be our individual conjectures as to the probabilities, in successive years of age, of a copyholder selling, and so giving rise to a subsequent alienation fine, the probability of a fine through death increases progressively with the age of the tenant, and must therefore have, upon the whole, a preponderating influence; a life-annuity table may therefore reasonably be adopted (as has been done both by the Commissioners and by Mr. Rouse) for the graduation of an enfranchisement table. The making use, accordingly, of life-annuity values for assigning to ages, younger or older than 35, an allowance proportionately larger or smaller than the single fine, has resulted in my enfranchisement table giving as the allowance for the best age (6) a deduction of rather more than $2\frac{1}{2}$ years' value from the Immediate Series of fines; this deduction diminishing to zero at the extremity of life.

Whether that maximum allowance could in itself be shown to be satisfactory, by a regard to the limits within which the precise truth might be demonstrated to have its

place, is a question discussed in a Paper which was honoured with publication by the Institute of Actuaries, in 1879,* and in which the investigation was made by me with an amount of detail that would be less appropriate for this Institution than for a Society specially mathematical. It was not I, however, who, by treating the question lightly, would imply that Surveyors' estimates of annual value are such perfunctory performances as to render it unworthy of serious consideration whether they should be multiplied by four or by five. Appended to that Paper was the Table which I have been very kindly permitted by the Council of that Institute to annex also to the present. It is an amplification (to suit each year of age) of the Table previously printed in our own "Transactions."

Before stating an epitome of my argument contained in the *Actuaries' Journal*, I must observe that here, in 1870, I had made a suggestion that 35 might be taken not merely to be the age indicating a tenancy of average duration, but also (in replying on the discussion) to be the average admission age; however, the following consideration afterwards occurred to me as showing that the second suggestion was erroneous. I had seen no reason for questioning the Commissioners' rough estimates that, upon the average of all manors, admissions occur about every fifteenth year ("Transactions," Vol. II., p. 133), and that tenancies lasting till death are about as frequent as tenancies terminated by alienation (Vol. II., p. 132). Now, although both of these estimates are much too rough to admit of being made the basis of any elaborate or precise argument, yet they are sufficiently trustworthy to have satisfied me that 35 is too young to be the average admission age; for, as the expectation of life at that age is 30 years, every alternate tenancy, being

* Journal of the Institute of Actuaries, July 1879. London; C. & E. Layton.

supposed to last till death, would consume the estimated average duration of two tenancies, and it would be thus implied that tenancies after alienations have no duration whatever.

The gist of the argument submitted to the Actuaries was as follows:—Reasons were detailed for admitting the probable correctness of an incidental remark by Mr. Rouse that 44 may be taken as about the average admission age, seeing especially that alienees (or purchasers) were commonly elderly men, as pointed out by him and echoed here by the late Mr. E. J. Smith, whose loss to us we have still to regret. Then, if the probability of a fine consequent upon alienation increased with the age of the tenant, as does the probability of a fine consequent upon death (in which case copyhold tenancies at successive ages would diminish in duration in the same proportion that absolute lifeholds do), it must be at a tenancy of that average admission age, 44, that the abatement of a single fine of two years' value should be made from the Immediate Series; and as the best life, aged 6, is worth in annuity-value about half as much again as a life of 44, the maximum abatement would be three years' value. But it was well pointed out to us by Mr. E. J. Smith that vendors (who sometimes, however, do not immediately alienate) are more common among the young than among the elderly; fines are therefore, upon the whole, less remote than under the above assumption. Consequently its abatements, culminating in a maximum of three years' value, would give too large a deduction for existing tenancies; hence the maximum of about two and a half years' value in my own enfranchisement table may, I feel, be regarded as closely correct, for Mr. Rouse's limitation of the maximum to only two years' value, or a single fine, is certainly inadmissible. This single fine is the basis

assumed in all the tables (Vol. II., pages 84 and 133) as the uniform purchase-money for tenancies of all possible durations. Therefore, in a table constructed by allowances from, or discount of, the Immediate Series, it can only be assigned (as in the foregoing argument) to whichever tenancy may be believed to be the one of *average* duration; and from this it follows that there must be some tenancies which are entitled to a tabular allowance *greater* than two years' value.

It has, indeed, been said that the fine and costs of alienation, for any ages, are together about two years' value; and that if the difference between the enfranchisement charge at the best and worst tenancies respectively is made to exceed such two years, an elderly copyholder of a valuable tenement might make a saving upon an enfranchisement by first surrendering to a young trustee. The indulgence manifested in the Commissioners' Table to tenants above seventy does, indeed, secure to them this saving without putting them to the trouble of any manœuvre at all. As regards my own Table, such saving could only be effected in the excessively rare case of a substitute, at least 70 years younger than himself, being selected by a tenant aged 76 or upwards. Therefore, a contraction of its maximum allowance from about $2\frac{1}{2}$ to 2 years' value would involve the injustice of charging to an enormous majority of tenants, of properties of all sizes, more than is properly due from them; and doing this for the sole purpose of taking from a relatively most insignificant number of tenants, older than 76, the slight value of a substitution which is legally open to them, and which arises from the peculiarity that fines are regardless of age. But, really, the business of a valuer is to take rights and obligations just as he finds them to exist, and not to make in the consequent calculations a modification to suit some other arrangements which might have existed if

a single mind had moulded the land laws of England during the past millennium.

The rate of progress between 20 and 70 in the Official Table is such that if, like every other to which we are in the habit of referring, it were duly extended to all ages, this would show an enfranchisement charge of about 2½ years' purchase for the best age, and about 6 years' purchase for the latest extremity of life. Now, the difference, 3½ years' purchase, is a range in excess of even the demonstrably excessive 3 years' purchase above discussed; and yet the unique directions as to ages above 20 and under 70, restrict that natural range of the Table to 2 years' purchase, which I have shown to be too little. The singular result is that the Table combines in itself both of two opposite errors.

The maximum allowance of rather more than 2½ as made by me, is nearer to Mr. Rouse's 2 than to the 3½ above deduced from the Official Table. The intermediate position of my own Table may be some recommendation of it to those who do not go to the trouble of following the arguments; and there may be further satisfaction to them in a few words from the leisurely review which some Actuary writes upon the Papers that appear in the quarterly journal of the Institute of Actuaries. In the *Insurance Record*, No. 869, after showing in detail that he well understood the incidence of copyhold fines, he concluded that my Table, "if "not the best possible, certainly is in advance of its pre- "decessors;" and that "either it, or one of a similar "character, might with advantage be substituted for that "which still carries the sanction of the Commissioners," and which "is of a very faulty, not to say absurd construction." This Institution will not desire from me such a pretty little piece of affectation as the expression of a doubt whether the reviewer is right. I of course imagine that my efforts have

somewhat advanced this intricate subject, or I could not have offered the results to two Societies; and I know that I ought to have made some advance, seeing that I have had the opportunity of profiting by both the failures and the successes of previous investigators. At a time when in every branch of science the most untiring pains are taken in the observation of facts, and in the deductions to be made from them, and when our own Institution, founded with the like aim, has grown at a rate which has not been surpassed, it may be hoped that we shall not be bound down to the purblind though very excusable empiricism of 30 years ago.

Fines-Certain.—The Scale of compensation before the Select Committee states:—

"2. For fines-certain on alienation or death of tenant "from one and a-half to two and a-half fines according to "the age of the tenant."

In the Bill as amended by that Select Committee, this had been altered (in a schedule) to "not more than three fines."

Fines of Mixed Nature.—The same Scale says:—

"5. Where the fine is arbitrary on each change of tenant "except where the customary heir is admitted as heir on "payment of a nominal fine the right to fines to be valued "as if the fine were arbitrary on each admittance and from "the sum so arrived at a deduction of not more than 25 per "cent. to be made."

This direction is unsatisfactory, as again ignoring those variations of fine-interval which are of primary importance.

If it were the custom that the ordinary arbitrary fines are charged only in the case of alienations, I should arrive at a calculation as follows. Again adopt the Commissioners' rough estimates that, upon the average of manors, a fine

happens every fifteenth year, and the probability of its being after a death is equal to the probability of its being after an alienation; hence in the case of the fine-interval of fifteen years, the charge at a given age for enfranchisement from fines all arbitrary would be one-half in respect of fines upon admissions after deaths, and one-half in respect of fines upon admissions of alienees. But in this assumed custom the former fines are not arbitrary, and therefore, in respect of these, an amount equal to one-half of such enfranchisement charge must be deducted. In the case of any fine-interval other than the above fifteen years, if the charge which at the given age is appropriate for the enfranchisement from fines all arbitrary, be reduced by the particular amount above-deducted in respect of death fines every thirty years, the charge remaining for the arbitrary fines arising upon only alienations will be greater or less than that just arrived at in the case of fifteen years, according as alienation fines are more or less frequent in consequence of the nature of the locality.

The assumption above-quoted of deaths and alienations being, in the aggregate, equal in frequency, is present in some items hereafter quoted from the Scale before the Select Committee; namely, in Numbers 2 and 4, as to fines (certain or arbitrary), due on death of the lord; and Number 7, as to heriots certain. However, in the item Number 5, now under consideration, it is not a consequent 50 per cent. which is directed to be deducted for the absence of some arbitrary fines, but only 25 per cent. This direction seems therefore to imply a further assumption that the specified cases "where the customary heir is admitted as heir," may be regarded as equal in number with the cases (not specified) of the admittance of tenants as devisees; and that the calculation laid down in the Scale was intended to apply to manors

where not merely alienees but devisees also are charged with an arbitrary fine. With this custom, the deduction of "one-half," in my method above-described, would have to be supplanted by the deduction of only one-fourth.

But in such exceptional manors the customary fine may be a different number of years' value from the "two" which is the limit of the ordinary arbitrary fine. To meet these cases, the above consideration that would be proper for the enfranchisement from the ordinary arbitrary fine would have to be afterwards varied in the proportion which this fine bears to the customary fine in the particular manor.

Fines due also on Death of the Lord.—In items 2 and 4 of the Scale before the Select Committee, an addition is here directed of half the amount that would be charged (at the lord's age) in respect of fines, either certain or arbitrary, on alienation or death of tenant. This direction is sufficiently correct for small fines-certain. But as regards the more important fines-arbitrary, there will be found among the Rules, at the end of this Paper, one drawn up in accordance with the fact that the nature of the charge to be ***made***, is identical with that which was just seen to need ***deduction*** when the fine was not arbitrary after the death of a tenant.

Building Land.—The following item appears in the Scale:—

"10. The improved annual value of the tenement shall "be the gross annual value at which the same is assessed to "the poor rate except in the case of building land, or of "land which has an aptitude for building and in every "such case one twenty-fifth part of the fee-simple value of "the land assuming it to be freehold shall be taken as the "improved annual value."

This has evident reference to the arbitrary fine, through the incidence of which the realisation of building value in lands subject to it is ordinarily precluded. An opinion is commonly entertained that, in respect of the obstructive power thus possessed by lords of manors, they may (instead of requiring half of such value as cannot be realised except with their consent) be contented with the principle that the ground-rent shall, in enfranchisements, be dealt with as if it were agricultural rent. When this is applied to an individual enfranchisement the effect is as follows:—So far as the agricultural value is concerned, the enjoyment of it during the current tenancy has been paid for by the tenant in the last fine; but the excess of building value above agricultural value will, immediately after the enfanchisement, be enjoyed by him without his having paid anything for this enjoyment during the estimated duration—long or short as the case may be—of the current tenancy. To correct the inconsistency of this I propose the following calculation:—Assign to the lord such a multiple of the agricultural annual value as would be chargeable for this at the age of the tenant; and, in respect of the dormant excess of building value, assign to the lord such a multiple of the corresponding ground-rent as would be chargeable if the tenant were of the oldest possible age, and a fine were therefore virtually receivable now.

Example.—Suppose building land worth . . £2,000
But, as agricultural, worth £20 × 30 = 600
Dormant excess . . £1,400

the ground-rent corresponding with which may be put as a twenty-fifth part. Adopting my own Table, and assuming the tenant's age to be 49, and the fine-interval to be 17

years, in which case the value of the Immediate Series is 5 years' purchase :—

£20 × 3½	=	£70
$\frac{5}{25}$ of £1,400	=	280
		£350

A common and, as I conceive, inconsistent plan would be to give to the lord simply $\frac{31}{25}$ of £2,000, or only £280, which, however, accords with the principle laid down in the Scale.

Change of Tenure: Escheats, Forfeitures, and Licenses to Demise.—The Scale says :—

"9. For escheats forfeitures and licenses to demise not "more than £1 per centum on the fee-simple value of the "land."

Upon these subjects I have no statistics of my own to offer. It has seemed to me that the terms appearing in the Commissioners' Reports of successive years indicate that, on an average, half a year's value, or (taking lands and houses together) about 2 per cent. upon the fee, is the allowance which has been agreed for these matters in fine-certain cases; they need, of course, to be compensated for in fine-arbitrary cases also.

Escheats and forfeitures may together be regarded as of about uniform worth, and for these the charge of 1 per cent. may be sufficient; but the fines for licenses to demise differ widely in different manors. The question of such licenses is of special importance as affecting the realisation of the value of building land held at fine-certain, and will often justify an additional charge of twice that percentage. The difficulty interposed by manorial restrictions upon demise is not so manifest with small plots, suited as sites for only one

or two houses; but the building value of a large tract of land can be the most rapidly realised by grants of long leases to builders, who agree to take these upon terms which answer their purpose. Although third parties are now telling them that they do not know what they are about, builders will still prefer to be permitted to act as if they did.

Quit-rents.—In the Bill as amended by the Select Committee, there was included in its Schedule the following item, which, in the Scale that had been laid before them, appeared in almost the same words:—

"1. For all certain annual rents boons or fixed annual "payments to be compensated for at not more than twenty-"five years' purchase."

The pettiness of payments is as fidgeting to the payer as to the receiver; and, considering the security of quit-rents, I do not see why the usual rate of 28 years' purchase for their enfranchisement should be reduced.

Heriots.—Upon this subject the Scale sets out the following items:—

"6. Compensation for a heriot of best beast or chattel "payable on the death of a tenant in no case to exceed £25 "and where the annual value of the lands in respect of "which the heriot is payable is less than £125 the compen-"sation for such heriot not to exceed one-fifth of the annual "value of the lands in respect of which it is payable. Where "the heriot is payable both on death and alienation the "compensation to be increased by an amount which shall "not exceed one-third of the sums indicated above."

"7. Fixed money heriots to be valued as a fine-certain "which is payable on alienation and death of tenant where "the heriot is payable on either of these events. If the

" heriot be payable on one of these events only the compen-
" sation not to exceed one-half the sum which would be
" payable if the heriot became due on each of the events
" mentioned."

As regards the above extracts, I have failed to discover why the compensation for heriots accruing on death and alienation should, when they are fixed sums, be set down as double that of the compensation for heriots on death, and yet be set down as only one-third more when the heriots are in kind. Again: In the former item about uncertain heriots, no direction is given to regulate the compensation by that proper regard to the age of the tenant which is directed in the latter item.

Respecting heriots when not fixed sums of money, a contention that the value for enfranchisement should be estimated mainly with reference to the value of the beasts or goods of the present tenant is, I think, unquestionably correct. A practice has, however, grown up of compounding for an accruing heriot by a regard to the value of the holding; and the above extract as to such uncertain heriots is framed in harmony with that practice. But if, as I think not improbable, the adoption in that extract of "one-fifth of the annual value of the lands" has proceeded from this fraction appearing in the seventeenth section of the Act of 1841, I must submit that it is owing to a misreading. At a time when it was permissible for the lord's profits to be (notwithstanding some dissentients) commuted throughout a manor, it was enacted, for the purpose of voting at meetings, that " the interest of tenants liable to heriots in kind shall in " respect of such liability be estimated according to such rate " as shall be specially made for the occasion by the said " Commissioners on such application as aforesaid or for want " of such rule at one-fifth of the annual value of their re-

"spective lands." Now, the purpose of this section, if read throughout, will be seen to have been that of making a sort of equation table of fines and heriots; so that while fine-arbitrary liability was to be measured by the yearly value of the lands, and fine-certain liability by half the amount of the fine, the liability to heriot in kind was to be measured by one-fifth of the annual value of the lands. I must therefore urge that such one-fifth annual value is to be regarded as half the value of the heriot, and by no means as its value for enfranchisement—even when payable only upon death—as is proposed in the Scale above-quoted. The rules which I hereafter submit for cases of heriots in kind will therefore give larger prices for enfranchisement than those set out in the Scale. It may be said that if heriots in kind are to be treated upon the basis of the annual value of the tenement, there should not be any maximum at all; but the introduction of that basis has arisen greatly from leniency towards the poorer copyholders, as owners ordinarily of the smaller holdings, and it would not be reasonable on this account to require that the holders of the larger tenements should pay for heriots more than an actual seizure would cost them.

The case of heriots accruing only upon the death of the tenant is analogous to that (already considered) of fines due after the death of the lord; and therefore should be similarly computed for enfranchisement.

Timber.—The Select Committee had adopted the following item of the Scale:—

"8. For timber where the tenant has a possessory

" interest only one-half of its value after making a full and " sufficient allowance for repairs in the absence of a custom " by which the extent of the lord's interest is determined. " Where by the custom of the manor the lord can enter " cut and carry away the timber the full value of it after " making a full and sufficient allowance for repairs."

In the course of this Paper I have dealt only with such parts of the Bill as most closely concern Surveyors; and I indulge in the hope that our learned Legal Associates will oblige us with the statement of their views as regards those parts especially which are strictly within their province.

In its main purpose, of forcing two parties to alter the arrangements between them with which they are themselves content, and forcing them also to bear the costs of the operation, the Bill is one which proposes a singularly forward step in the seductive path of legislative interference with private rights.

ENFRANCHISEMENT TABLE.

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Note.—If by the customs of the manor the widow of a tenant is entitled to free-bench, any reference to the Table may be made at an age 5 years younger than that of the existing tenant (when a male), but not less than the age 6.

Age of Copyholder.	Number of Years intervening between Fines, according to the degree of Frequency of Alienations; as in the following Neighbourhoods respectively :—									Age of Copyholder.
	That of the Metropolis.	That of Extending Towns.		That of Unprogressive Towns.		In Agricultural Districts.		In Retrograde Districts.		
	13	14	15	16	17	18	19	20	21	
0	4 23	3·87	3·55	3·27	3·03	2·81	2·62	2·44	2·29	0
1	3·89	3·53	3·21	2·93	2·69	2·47	2·28	2·10	1·95	1
2	3·77	3·40	3·09	2·81	2·56	2·35	2·16	1·98	1·83	2
3	3·71	3·35	3·03	2·75	2·51	2·29	2·10	1·93	1·77	3
4	3·68	3·32	3·00	2·72	2·48	2·26	2·07	1·90	1·74	4
5	3·67	3·30	2·99	2·71	2 47	2·25	2·06	1·88	1·73	5
6	3·67	3·30	2·98	2·71	2·46	2·25	2·05	1·88	1·72	6
7	3·67	3·30	2 99	2·71	2·46	2·25	2·06	1·88	1·73	7
8	3·68	3·31	2·99	2·72	2·47	2·26	2·06	1·89	1·73	8
9	3·69	3·32	3·01	2·73	2·48	2·27	2·08	1·90	1·75	9
10	3·71	3·34	3·02	2·74	2·50	2·28	2·09	1·92	1·76	10
11	3·72	3·36	3·04	2·76	2·52	2·30	2·11	1·94	1·78	11
12	3·74	3·38	3·06	2·78	2·54	2·32	2·13	1·96	1·80	12
13	3·77	3·40	3·08	2·80	2·56	2·34	2·15	1·98	1·82	13
14	3·79	3·42	3·10	2·83	2·58	2·37	2·17	2·00	1·84	14
15	3·81	3·45	3·13	2·85	2·61	2·39	2·20	2·02	1·87	15
16	3·84	3·47	3·15	2·87	2·63	2·41	2·22	2·05	1·89	16
17	3·86	3·49	3·17	2·90	2·65	2·44	2·24	2·07	1·91	17
18	3·88	3·51	3·20	2·92	2·68	2·46	2·27	2·09	1·94	18
19	3·90	3·54	3 22	2·94	2·70	2·48	2·29	2·11	1·96	19
20	3·92	3·56	3·24	2·96	2·72	2·50	2·31	2·14	1·98	20
21	3·94	3·58	3·26	2·98	2·74	2·52	2·33	2·16	2·00	21
22	3·96	3·60	3·28	3·00	2·76	2·54	2·35	2·18	2·02	22
23	3·98	3·62	3·30	3·02	2·78	2·56	2·37	2·20	2·04	23
24	4·00	3·64	3·32	3·04	2·80	2·58	2·39	2·22	2·06	24
25	4·03	3·66	3·34	3·06	2·82	2·60	2·41	2·24	2·08	25
26	4·05	3 68	3·36	3·09	2·84	2·63	2·43	2·26	2·10	26
27	4·07	3·70	3·39	3·11	2·87	2·65	2·46	2·28	2·13	27
28	4·09	3·73	3·41	3·13	2·89	2·67	2·48	2·31	2·15	28
29	4·12	3·75	3·43	3·16	2·91	2·70	2·50	2·33	2·17	29
30	4·14	3·77	3·46	3·18	2·94	2·72	2·53	2·35	2·20	30
31	4·17	3·80	3·48	3·20	2·96	2·74	2·55	2·38	2·22	31
32	4·19	3·82	3·51	3·23	2·99	2·77	2·58	2·40	2·25	32
33	4·22	3·85	3·53	3·25	3·01	2·79	2·60	2·43	2·27	33
34	4·24	3·88	3·56	3·28	3·04	2 82	2·63	2·45	2·30	34
35	4·27	3·90	3·58	3·31	3·06	2·85	2·65	2·48	2·32	35
36	4·30	3·93	3·61	3·33	3·09	2·87	2·68	2·51	2·35	36
37	4·32	3·96	3·64	3·36	3·12	2·90	2·71	2·54	2·38	37
38	4·35	3·99	3·67	3·39	3·15	2·93	2·74	2·56	2·41	38
39	4·38	4·01	3·70	3·42	3·18	2·96	2·77	2·59	2·44	39
40	4·41	4·04	3·73	3·45	3·21	2·99	2·80	2·62	2·47	40
41	4·44	4·07	3·76	3·48	3·24	3·02	2·83	2·65	2·50	41
42	4·47	4·10	3·79	3·51	3·27	3·05	2·86	2·68	2·53	42
43	4·50	4·14	3·82	3·54	3·30	3·08	2·89	2·71	2·56	43
44	4·53	4·17	3·85	3·57	3·33	3·11	2·92	2·75	2·59	44
45	4·57	4·20	3·88	3·61	3·36	3·15	2·95	2·78	2·62	45
46	4·60	4·23	3·91	3·64	3·39	3·18	2·98	2·81	2·66	46
47	4·63	4·27	3·95	3·67	3·43	3·21	3·02	2·84	2·69	47
48	4·67	4·30	3·98	3·70	3·46	3·24	3·05	2·88	2·72	48
49	4·70	4·33	4·02	3·74	3·50	3·28	3·09	2·91	2·76	49
50	4·74	4·37	4·05	3·77	3·53	3·31	3·12	2·95	2·79	50

Part I.; *for Land* (3 *per cent.*)

Age of Copyholder.	Number of Years intervening between Fines, according to the degree of Frequency of Alienations; as in the following Neighbourhoods respectively :—									Age of Copyholder.
	That of the Metropolis.		That of Extending Towns.		That of Unprogressive Towns.		In Agricultural Districts.		In Retrograde Districts.	
	13	14	15	16	17	18	19	20	21	
51	4·77	4·40	4·09	3·81	3·57	3·35	3·16	2·98	2·83	51
52	4·81	4·44	4·12	3·84	3·60	3·38	3·19	3·02	2·86	52
53	4·84	4·47	4·16	3·88	3·64	3·42	3·23	3·05	2 90	53
54	4·88	4·51	4·19	3·92	3·67	3·46	3·26	3·09	2·93	54
55	4·91	4·55	4·23	3·95	3·71	3·49	3·30	3·12	2·97	55
56	4·95	4·58	4·26	3·99	3·74	3·53	3·33	3·16	3·01	56
57	4·99	4·62	4·30	4·02	3·78	3·56	3·37	3·20	3·04	57
58	5·02	4·66	4·34	4·06	3·82	3·60	3·41	3·24	3·08	58
59	5·06	4·69	4·38	4·10	3·85	3·64	3·45	3·27	3·12	59
60	5·10	4·73	4·41	4·14	3·89	3·68	3·48	3·31	3·15	60
61	5·13	4·77	4·45	4.17	3·93	3·71	3·52	3·35	3·19	61
62	5·17	4·81	4·49	4·21	3·97	3·75	3·56	3·38	3·23	62
63	5·21	4·84	4·53	4·25	4·00	3·79	3·60	3·42	3·27	63
64	5·25	4·88	4·56	4·29	4·04	3·83	3·63	3·46	3·30	64
65	5·28	4·92	4·60	4·32	4·08	3·86	3·67	3·50	3·34	65
66	5·32	4·95	4·64	4·36	4·11	3·90	3·71	3·53	3·38	66
67	5·36	4·99	4·67	4·39	4·15	3·93	3·74	3·57	3·41	67
68	5·39	5·02	4·71	4·43	4·19	3·97	3·78	3·60	3·45	68
69	5·43	5·06	4·74	4·46	4·22	4·00	3·81	3·64	3·48	69
70	5·46	5·09	4·78	4·50	4·25	4·04	3·85	3·67	3·52	70
71	5·49	5·13	4·81	4·53	4·29	4·07	3·88	3·71	3·55	71
72	5·52	5·16	4·84	4·56	4·32	4·10	3·91	3·74	3·58	72
73	5·56	5·19	4·87	4·59	4·35	4·13	3·94	3·77	3·61	73
74	5·59	5·22	4·90	4·63	4·38	4·16	3·97	3·80	3·64	74
75	5·62	5·25	4·93	4·65	4·41	4·19	4·00	3·83	3·67	75
76	5·64	5·28	4·96	4·68	4·44	4·22	4·03	3·86	3·70	76
77	5·67	5·30	4·99	4·71	4·47	4·25	4·06	3·88	3·73	77
78	5·70	5·33	5·01	4·74	4·49	4·28	4·08	3·91	3·75	78
79	5·72	5·36	5·04	4·76	4·52	4·30	4·11	3·93	3·78	79
80	5·75	5·38	5·06	4·78	4·54	4·32	4·13	3·96	3·80	80
81	5·77	5·40	5·08	4·81	4·56	4·35	4·15	3·98	3·82	81
82	5·79	5·42	5·11	4·83	4·59	4·37	4·18	4·00	3·85	82
83	5·81	5·44	5·13	4·85	4·61	4·39	4·20	4·02	3·87	83
84	5·83	5·46	5·15	4·87	4·63	4·41	4·22	4·04	3·89	84
85	5·85	5·48	5·17	4·89	4·64	4·43	4·24	4·06	3·91	85
86	5·87	5·50	5·18	4·91	4·66	4·45	4·25	4·08	3·92	86
87	5·88	5·52	5·20	4·92	4·68	4·46	4·27	4·10	3·94	87
88	5·90	5·53	5·22	4·94	4·70	4·48	4·29	4·11	3·96	88
89	5·92	5·55	5·23	4·95	4·71	4·49	4·30	4·13	3·97	89
90	5·93	5·56	5·25	4·97	4·73	4·51	4·32	4·14	3·99	90
91	5·94	5·58	5·26	4·98	4·74	4·52	4·33	4·16	4·00	91
92	5·96	5·59	5·27	5·00	4·75	4·54	4·34	4·17	4·01	92
93	5·97	5·60	5·29	5·01	4·76	4·55	4·36	4·18	4·03	93
94	5·98	5·61	5·30	5·02	4·78	4·56	4·37	4·19	4·04	94
95	5·99	5·63	5·31	5·03	4·79	4·57	4·38	4·20	4·05	95
96	6·00	5·64	5·32	5·04	4·80	4·58	4·39	4·21	4·06	96
97	6·01	5·65	5·33	5·05	4·81	4·59	4·40	4·22	4·07	97
98	6·02	5·65	5·34	5·06	4·82	4·60	4·41	4·23	4·08	98
99	6·03	5·66	5·35	5·07	4·82	4·61	4·42	4·24	4·09	99
100	6·04	5·67	5·35	5·08	4·83	4·62	4·42	4·25	4·09	100
Immediate Series	6·27	5·90	5·58	5·31	5·06	4·85	4·65	4·48	4·32	Immediate Series

Age of Copyholder.	Number of Years intervening between Fines, according to the degree of Frequency of Alienations; as in the following Neighbourhoods respectively:—									Age of Copyholder.
	That of the Metropolis.		That of Extending Towns.		That of Unprogressive Towns.		In Agricultural Districts.		In Retrograde Districts.	
	11	12	13	14	15	16	17	18	19	
0	3·78	3·40	3·08	2·80	2·57	2·36	2·18	2·02	1·88	0
1	3·46	3·08	2·76	2·48	2·25	2·04	1·86	1·70	1·56	1
2	3·34	2·96	2·64	2·37	2·13	1,92	1·74	1·58	1·44	2
3	3·29	2·91	2·59	2·31	2.08	1·87	1·69	1·53	1·39	3
4	3·26	2·88	2·56	2·28	2·05	1·84	1·66	1·50	1·36	4
5	3·24	2·86	2·54	2·27	2·03	1·82	1·64	1·48	1·34	5
6	3·23	2·85	2·53	2·26	2·02	1·82	1·63	1.47	1·33	6
7	3·23	2·85	2·53	2·26	2·02	1·82	1·63	1·47	1.33	7
8	3·24	2·86	2·54	2·26	2·03	1·82	1·64	1·48	1·34	8
9	3·24	2·86	2.54	2·27	2·03	1·83	1·65	1·49	1·34	9
10	3·26	2·88	2 55	2·28	2·04	1·84	1·66	1·50	1·35	10
11	3·27	2·89	2·57	2·29	2·06	1·85	1·67	1·51	1·37	11
12	3·28	2·90	2·58	2·31	2·07	1·87	1·69	1·53	1·38	12
13	3·30	2·92	2·60	2·33	2·09	1·89	1·70	1·54	1·40	13
14	3·32	2·94	2·62	2·35	2·11	1·90	1·72	1·56	1·42	14
15	3·34	2·96	2·64	2·36	2·13	1·92	1·74	1·58	1·44	15
16	3·36	2·98	2·66	2·38	2·15	1·94	1·76	1·60	1·46	16
17	3·38	3·00	2·67	2·40	2·16	1·96	1·78	1·62	1·47	17
18	3·39	3·01	2·69	2·42	2·18	1·98	1·80	1·64	1·49	18
19	3·41	3·03	2·71	2·44	2·20	1·99	1·81	1·65	1·51	19
20	3·43	3·05	2·73	2·45	2·22	2·01	1·83	1·67	1·53	20
21	3·44	3·06	2·74	2·47	2·23	2·03	1·84	1·68	1·54	21
22	3·46	3·08	2·76	2·48	2·25	2·04	1·86	1·70	1·56	22
23	3·47	3·09	2·77	2·50	2·26	2·06	1·88	1·72	1·57	23
24	3·49	3·11	2·79	2·52	2·28	2·07	1·89	1·73	1·59	24
25	3·51	3·13	2·81	2·53	2·30	2·09	1·91	1·75	1·61	25
26	3·53	3.15	2·82	2·55	2·31	2·11	1·93	1·77	1·62	26
27	3·54	3·16	2·84	2·57	2·33	2·13	1·95	1·79	1·64	27
28	3·56	3·18	2·86	2·59	2·35	2·15	1·96	1·80	1·66	28
29	3·58	3·20	2·88	2·61	2·37	2·16	1·98	1·82	1·68	29
30	3.60	3·22	2·90	2·63	2·39	2·18	2·00	1·84	1·70	30
31	3·62	3·24	2·92	2·65	2·41	2 20	2·02	1·86	1·72	31
32	3·64	3·26	2·94	2·67	2·43	2·23	2·04	1·88	1·74	32
33	3·66	3·28	2·96	2·69	2·45	2·25	2·07	1·91	1·76	33
34	3·68	3·31	2·98	2·71	2·47	2·27	2·09	1·93	1·78	34
35	3·71	3·33	3·01	2·73	2·50	2·29	2·11	1·95	1·81	35
36	3·73	3·35	3·03	2·76	2·52	2·31	2·13	1·97	1·83	36
37	3·75	3·37	3·05	2·78	2·54	2·34	2·16	2·00	1·85	37
38	3·78	3·40	3·08	2·81	2·57	2·36	2·18	2·02	1·88	38
39	3·80	3·42	3·10	2·83	2·59	2·39	2·21	2·05	1·90	39
40	3·83	3·45	3·13	2·86	2·62	2·41	2·23	2·07	1·93	40
41	3·86	3·48	3·16	2·88	2·65	2·44	2·26	2·10	1·96	41
42	3·88	3·50	3·18	2·91	2·67	2·47	2·29	2·13	1·98	42
43	3·91	3·53	3·21	2·94	2·70	2·50	2·31	2·15	2·01	43
44	3·94	3·56	3·24	2·97	2·73	2·52	2·34	2·18	2·04	44
45	3·97	3 59	3·27	2·99	2·76	2·55	2·37	2·21	2·07	45
46	4·00	3·62	3·30	3·02	2·79	2·58	2·40	2·24	2·10	46
47	4·03	3·65	3·33	3·05	2·82	2·61	2·43	2·27	2·13	47
48	4·06	3·68	3·36	3·09	2·85	2·64	2·46	2·30	2·16	48
49	4·09	3·71	3·39	3·12	2·88	2·67	2·49	2·33	2·19	49
50	4·12	3·74	3·42	3·15	2·91	2·71	2·53	2·37	2·22	50

The values in Part II. of the Table will admit of diminution in

Part II.; *for Houses* (4 *per cent.*)

Age of Copyholder.	Number of Years intervening between Fines, according to the degree of Frequency of Alienations; as in the following Neighbourhoods respectively :—									Age of Copyholder.
	That of the Metropolis.		That of Extending Towns.		That of Unprogressive Towns.		In Agricultural Districts.		In Retrograde Districts.	
	11	12	13	14	15	16	17	18	19	
51	4·16	3·78	3·46	3·18	2·95	2·74	2·56	2·40	2·26	51
52	4·19	3·81	3·49	3·21	2·98	2·77	2·59	2·43	2·29	52
53	4·22	3·84	3·52	3·25	3·01	2·81	2·62	2·46	2·32	53
54	4·26	3·88	3·56	3·28	3·05	2·84	2·66	2·50	2·35	54
55	4·29	3·91	3·59	3·32	3·08	2·87	2·69	2·53	2·39	55
56	4·32	3·94	3·62	3·35	3·11	2·91	2·73	2·57	2·42	56
57	4·36	3·98	3·66	3·39	3·15	2·94	2·76	2·60	2·46	57
58	4·40	4·02	3·70	3·42	3·19	2·98	2·80	2·64	2·50	58
59	4·43	4·05	3·73	3·46	3·22	3·02	2·83	2·67	2·53	59
60	4·47	4·09	3·77	3·49	3·26	3·05	2·87	2·71	2·57	60
61	4·51	4·13	3·81	3·53	3·30	3·09	2·91	2·75	2·61	61
62	4·54	4·16	3·84	3·57	3·33	3·13	2·95	2·79	2 64	62
63	4·58	4·20	3·88	3·61	3·37	3·16	2·98	2·82	2·68	63
64	4·62	4·24	3·92	3·64	3·41	3·20	3·02	2·86	2·72	64
65	4·65	4·27	3·95	3·68	3·44	3·24	3·06	2·90	2·75	65
66	4·69	4·31	3·99	3·72	3·48	3·27	3·09	2·93	2·79	66
67	4·73	4·35	4·03	3·75	3·52	3·31	3·13	2·97	2·83	67
68	4·76	4·38	4·06	3·79	3·55	3·35	3·17	3·01	2·86	68
69	4·80	4·42	4·10	3·82	3·59	3·38	3·20	3·04	2·90	69
70	4·83	4·45	4.13	3·86	3·62	3·42	3·24	3·08	2·93	70
71	4·87	4·49	4·17	3·89	3·66	3·45	3·27	3·11	2·97	71
72	4·90	4·52	4·20	3·93	3·69	3·48	3·30	3·14	3·00	72
73	4·93	4·55	4·23	3·96	3·72	3·52	3·34	3·17	3·03	73
74	4·96	4·58	4·26	3·99	3·75	3·55	3·37	3·21	3·06	74
75	4·99	4·61	4·29	4·02	3·78	3·58	3·40	3·24	3·09	75
76	5·02	4·64	4·32	4·05	3·81	3·61	3·43	3·27	3·12	76
77	5·05	4·67	4 35	4·08	3·84	3·64	3·45	3·29	3·15	77
78	5·08	4·70	4·38	4·11	3·87	3·66	3·48	3·32	3·18	78
79	5·11	4·73	4·41	4·13	3·90	3·69	3·51	3·35	3·21	79
80	5·13	4·75	4·43	4·16	3·92	3·72	3·53	3·37	3·23	80
81	5·16	4·78	4·46	4·18	3·95	3·74	3·56	3·40	3·26	81
82	5·18	4·80	4·48	4·21	3·97	3·76	3·58	3·42	3·28	82
83	5·20	4·82	4·50	4·23	3·99	3·79	3·60	3·44	3·30	83
84	5·22	4·84	4·52	4·25	4·01	3·81	3·63	3·47	3,32	84
85	5·24	4·86	4·54	4·27	4·03	3·83	3·65	3·49	3·34	85
86	5·26	4·88	4·56	4·29	4·05	3·85	3·67	3·50	3·36	86
87	5·28	4·90	4·58	4·31	4·07	3·86	3·68	3·52	3·38	87
88	5·30	4·92	4·60	4·32	4·09	3·88	3·70	3·54	3·40	88
89	5·32	4·94	4·61	4·34	4·10	3·90	3·72	3·56	3·41	89
90	5·33	4·95	4·63	4·36	4·12	3·91	3·73	3·57	3·43	90
91	5·35	4·97	4·65	4·37	4·14	3·93	3·75	3·59	3·45	91
92	5·36	4·98	4·66	4·39	4·15	3·94	3·76	3·60	3·46	92
93	5·37	4·99	4·67	4·40	4·16	3·96	3·78	3·62	3·47	93
94	5·39	5·01	4·69	4·41	4·18	3·97	3·79	3·63	3·49	94
95	5·40	5·02	4·70	4·42	4·19	3·98	3·80	3·64	3·50	95
96	5·41	5·03	4·71	4·44	4·20	3·99	3·81	3·65	3·51	96
97	5·42	5·04	4·72	4·45	4·21	4·00	3·82	3·66	3·52	97
98	5·43	5·05	4·73	4·46	4·22	4·01	3·83	3·67	3·53	98
99	5·44	5·06	4·74	4·47	4·23	4·02	3·84	3·68	3·54	99
100	5·45	5·07	4·75	4·47	4·24	4·03	3·85	3·69	3·55	100
Immediate Series	5·71	5·33	5·01	4·73	4·50	4·29	4·11	3·95	3·81	Immediate Series

the case of country cottages, if very old and unlikely to be rebuilt.

Rules

now proposed for adoption with the foregoing Table in calculations of the consideration-money for enfranchisement from manorial incidents.

Fines.

Case 1.—*Fines-arbitrary, due on admission of heirs and of alienees.*—The consideration will be the sum produced upon multiplying the foregoing tabular value into the finable value of the copyhold tenement.

The finable value is the annual value after deducting the quit-rent and other outgoings (including the cost of ordinary annual repairs), but not land-tax.

Case 2.—*Fines-certain, due on admission of heirs and of alienees.*—The amount is generally so small that a charge of about 2¼ fines is sufficiently correct.

> If greater accuracy is desired, the calculations should be made according to the method hereafter mentioned for heriots when of a fixed sum of money.

Case 3.—*Fines of mixed nature :—*

(A) For fines-arbitrary, if of the ordinary amount :—

From the tabular value which would be used in "Case 1" deduct the following portion of the tabular value appearing in the same part of the table, and opposite to the same age, but in the 15 years' column :—

One-half of it, if such fines are chargeable only on admittance of alienees;

Or, one-fourth of it, if such fines are also chargeable on admittance of devisees.

Multiply the remainder into the finable value.

(B) For fines-arbitrary, if other than the ordinary

amount:—The result of the above rule should be proportionately varied.

Thus:—As two years' value is to the number of years' value charged as such fine in the particular manor, so is the said result to the required consideration to be charged.

(c) For fines-certain (if any):—Reduce the result of "Case 2"—

By about one-half, if on all admittances after death;

Or, by about three-fourths, if only on admittance of customary heirs.

Case 4.—*Fines due also on death of the lord.*—The additional consideration will be as follows:—

(a) *If fines-arbitrary:*—Take half of the tabular value appearing opposite to the age of the lord, but in the 15 years' column, and multiply it into the finable value.

(b) *If fines-certain:*—Charge about half of the result of "Case 2."

Building Land.

When fines are arbitrary:—Divide the estimated fee-simple value into (a) the value of the property as at present used; and (b) the dormant excess of building value.

Deal with the finable value in "(a)" according to the foregoing rules.

Deal with "(b)" by giving to the lord so much of it as is indicated by a fraction having for its denominator 25, and for its numerator the value of the Immediate Series in such column of Part I. of the Table as is appropriate to the locality (See Example given at page 62).

When fines are certain:—See the following rule as to change of tenure.

Change of Tenure.

Escheats and Forfeitures.—For the lord's profits in respect of these, charge one per cent. of the fee-simple value of the property.

Licenses to demise.—For the lord's fines upon the grants of these, charge an additional percentage proportionate to the degree of detriment caused by the manorial restrictions upon demise. This, in the case of building land held at fine-certain, may justify an additional charge as high as two per cent.

Quit-Rents.

Charge twenty-eight times their annual amount.

Heriots.

Case 1.—*If accruing on death, and on surrender for alienation.*—Multiply the value appearing in the 3 per cent. part of the Table into the following amounts.

(A) When the heriot is a fixed sum:—Into half of such sum.

(B) When the heriot is not a fixed sum:—Into the following portions of the annual value of the tenement (if this is to be the criterion), viz.:—

One-sixth (but not more than £10) when the heriot is only the best beast, or only the best goods; one-fifth (but not more than £12) when the heriot is either best beast or best goods, as the lord may choose.

Case 2.—*If accruing only on death.*—Multiply half the tabular value taken from the 15 years' fine-interval column, in the 3 per cent. part of the Table, into the sums mentioned above under "(A)" or "(B)" as the case may require.

Case 3.—*If liability to the seizure of more than one heriot* (*not being fixed sums*).—A very moderate estimate would be a charge for the second heriot, of half of the sum charged for the first; for the third heriot, half of that charged for the second; and so on.

Timber:—See page 66.

Sporting:—See page 44.

Minerals.

Ordinarily, these belong to the lord, but cannot be taken without the permission of the copyholder. Unless, therefore, a well-established custom in the particular manor dictates the sharing of their value in any other proportion, an equal division of it between the lord and the tenant is appropriate. See also page 44.

APPENDIX.

CORRESPONDENCE ON

THE COPYHOLD ENFRANCHISEMENT BILL.

Published in the Estates Gazette.

Sir,—Supposing this most questionable Bill to get through Committee in the House of Commons, it will happily still have to be considered by the Peers. It provoked a division last year in the Lower House; but upon the night of the recent resumption of the present Session, it was dexterously driven through the second reading with a minimum of speech.

At the present time a copyholder can, if he chooses, compel the lord of the manor to convert the copyhold tenement into freehold; and, conversely, the lord of the manor, if he chooses, can compel the copyholder to take such an enfranchisement: the Land Commissioners, if desired, being in all cases the referees as to terms. It may, therefore, be supposed, without flattery, that if an enfranchisement will conduce to the interest of either the lord or the copyholder, an enfranchisement will take place, and that the question might therefore be left to the

parties themselves; but there are outsiders to whom this state of the case appears to be utterly unsatisfactory. Accordingly the object of the present Bill is that of forcing an enfranchisement upon every new copyholder, notwithstanding that he and the lord of the manor may both prefer a continuance of the copyhold tenure.

The Bill has been brought forward in successive years by Mr. Waugh, and it is backed by other Cumberland members. It has, however, received support from the Government side, and the ground for this, as alleged by one of its members on 6th April, 1881, was that "before dealing with the land question as a whole, the Government thought it better to deal separately with some questions of land reform, and this was one of them." If the preparation for a further course of treatment is thus assigned as a reason for interfering with the existing status of lords and copyholders, regardless of what may be their own wishes, it is clearly one of those cases in which the parties affected may be pardoned for desiring the simultaneous production of the other measure for which the sacrifice of their interests is proposed; this is a wish in which most freehold landowners will be likely to participate.

Meanwhile, be it observed that whilst the great desire of land law agitators is a conjectural simplification of the transfer of land, they are here proposing forcibly to abolish that simplest and most continuous record of legal title which is afforded to copyholders in the grants on the Court Rolls of a manor, often accompanied as they are with plan, terrier, and all.

It may hence be supposed that the depriving the copyholder of this advantage is to be more than compensated for by advantages of other kinds which are to be conferred upon him. It is, therefore, well to consider the grounds upon which the measure has been advocated professedly in the interest of copyhold tenants themselves, particularly as this is not the Bill of some political Rip van Winkle, but is brought in and supported by honourable members, who appear to be perfectly aware that, for a quarter of a century past, tenants have been able at any moment to convert their lands into freehold.

The old story then has been reiterated last Session that the

heriot on the death of a tenant is sometimes the rich man's race-horse, and sometimes the poor man's cow. But there is a large proportion of copyholds which are either not subject to heriots at all, or subject only to small money payments as such; and, therefore, heriots afford no pretext for these copyholds being interfered with. Even, as regards any holding to which there attaches the liability of a seizure of the tenant's beast, if he have one, or (in comparatively rare cases) of some one of his goods, the tenant can treat with the lord for the commutation of such liability into an annual rent-charge; or, failing this, he can get rid of copyhold incidents altogether, by an enfranchisement. And if the tenant does not do this, it may be assumed that he knows an enfranchisement would be less advantageous to him, on the whole, than the copyhold tenure with its heriot liability; and yet the promoters of the Bill come forward with exuberant benevolence, and tell him enfranchise he shall. Certainly it is possible that in some cases the tenant would elect to enfranchise if he remembered to give consideration to the matter; but, in this epoch of law making and unmaking, we surely ought not to be burdened with an additional Act of Parliament because a man who ought to keep a memorandum-book may omit to do so.

Another honourable member pointed out last year that, while copyholds exist, a pretty family quarrel might arise when a copyholder might neglect to enfranchise, and might die intestate, and holding a property which might be of the (unusual) custom of Borough English, and therefore passing to his youngest son, but which might be in the midst of a freehold estate which would therefore descend to his eldest son. But the difficulty arising from so remarkable a concurrence of probabilities might be got over before long; and, even if not, surely the whole copyhold world ought not to be convulsed in order to prevent the possibility of this utterly insignificant addition to the existing number of family quarrels.

Then it was complained by the introducer of the Bill last Session that "Stewards' fees became much increased when the copyhold property of one man became, under his will, divisible among several persons." But it is also the case that when a freehold property becomes similarly divided, there arises, upon future dealings with the several portions of it, a

multiplication of legal costs; only they happen to be those of solicitors instead of steward. If stewards' fees are excessive, let us have a Stewards' Remuneration Act, just as we have had a Solicitors' Remuneration Act, instead of which, the remedy proposed in this measure is that copyholders who now elect to go on paying stewards' fees for renewals of copyhold grants in preference to enfranchising their tenements, shall yet be compelled to enfranchise rather than go on paying stewards' fees. And this again is proposed as friendship to the copyholders.

Mr. Waugh finally stated, 12th March, 1884, that "if he was asked why he proposed to interfere with the status quo, his reply was the expenses of enfranchisement were so great at present that many tenants were deterred from undertaking it." The present Bill of 53 sections is a most stupendous issue of this "only reason"; whereas it would have been about enough simply to provide that in future the lord shall always pay the costs of his valuer for the enfranchisement.

Mr. Stanley Leighton said of the Bill of last Session: "Who demanded the Bill? Not the lords of manors, because they could enfranchise now; not the tenants of manors, because they could enfranchise now; not the public, for not a single petition had been presented for the Bill." Yet the present Bill is still more destructive than its predecessor of last Session, which was so referred to; for instead of its operation being deferred in each case until the existing grant shall be renewed, it now contains a section (50) empowering one-half of the tenants of a manor to force an instant enfranchisement upon the whole of the tenants, through the instrumentality of some roving Assistant Land Commissioners to be appointed for the purpose. It thus seeks to revive (in the form of enfranchisement instead of commutation) an immediate and despotic interference with contented copyholders, which was part of the original Act of 1841, though very properly repealed by the Act of 1858. This, too, is a proceeding which would be a hardship, more particularly upon the smallest and poorest copyholders, by depriving them immediately of a part of their income. Yet, except in the addition of this tyrannical section, it is hard to see a difference between the operation of the present Bill, and that of the Bill which on the 12th March,

1884, Mr. Elton moved the House to reject. In the course of that speech, he said: "Another objection to the Bill was that the enfranchisement clause was unnecessary, inasmuch as a vast amount of enfranchisement of copyholds had taken place, and was taking place, and would always take place, whenever the landlord and the tenant could agree upon terms. In such cases as these, it was the policy of the law to allow people to remain quiet."

Among the objectionable details of the Bill is the stipulation that the compensation to the lord for an enfranchisement shall take the form of an annual rent-charge. This will, in multitudes of cases, be so small in amount as to be relatively very costly of collection, particularly owing to the difficulty which will arise from the lord having no longer the knowledge, through the Court Rolls, of the ownership of the land charged.

I am, Sir,
Your obedient servant,
A Looker-on.

March 3rd, 1885.

Sir,—The answer to your correspondent "Looker-on" will be found in the subjoined report of a very strong Committee of the House of Commons, who sat in the year 1838. The Bill before the House seeks to carry out the recommendations of that and another Committee who reported in 1851, in a gradual manner, with due regard to the rights of the lord, the tenant, and (what is of most importance to "Looker-on") the steward, whose exactions are even greater now than they were in the time of Roger North.

Yours, &c.,
M.P.

House of Commons,
March 14, 1885.

The following is the full text of the Report of the Select Committee on Copyhold Enfranchisement appointed in 1838:—

"Your Committee find that, under the existing law, the

" power to enfranchise copyholds very generally exists. It is " usually either incident to the estate of the lord, or it is " given to him by the deed or will under which his lands are " settled. The disposition, however, to enfranchise is by no " means equally extensive with the power: this arises in many " cases from ignorance of the just rights of the parties, in " others from a desire to preserve undisturbed manorial " privileges and authorities; but in the great majority of cases " from the want of a tribunal in which both parties have con- " fidence to adjust their respective rights.

" Your Committee regret that any impediment should exist " in the way of this enfranchisement. From a very early " period, complaints have been made against copyholds, and " regret has frequently been expressed that they were not " included in the great alteration which was made in the law of " tenures in the reign of Charles the Second. Very shortly " after this change took place, Roger North, in his Life of " Lord Keeper Guildford, Vol. I., p. 36, says; 'Small tene- " ments and pieces of land that have been men's inheritances " for divers generations, to say nothing of the fines, are " devoured by fees; so that if it were only to relieve the " poorest of the landowners of the nation from such extortions " and oppressions, without more, there is reason enough to " abolish the tenure. It was somewhat unequal when the " Parliament took away the royal tenures "in capite," that " the lesser tenures of the gentry were left exposed to as " grievous abuses as the former.' Your Committee are satis- " fied that this tenure is ill adapted to the wants of the present " day, and is a blot on the judicial system of the country. " They consider that the peculiarities and incidents of copy- " holds (which have their origin in the villenge of the feudal " system) are at once highly inconvenient to the owners of the " land, and prejudicial to the general interests of the State. " By the nature of the copyholder's tenure independent of " custom, some of the most valuable productions of the soil " are distributed between the lord and the copyholder, so as " to be of little value to either. Thus the lord cannot cut " the timber growing on the land without the consent of the " tenant, nor can the tenant cut it without the license of the " lord; the lord cannot open and work a mine under the soil

" without the consent of the tenant, nor can the tenant open " and work it without the license of the lord. It is not sur- " prising that under these circumstances the mine remains " unworked, and the timber has disappeared from the face of " the land. Where also the fine payable to the lord is arbi- " trary, it operates as a tax upon the capital of the tenant, " and is a direct check to all building and all agricultural and " other improvements. In this cursory mention of the dis- " advantages of copyholds, and as more peculiarly affecting " this tenure, heriots must not be forgotten, as perhaps the " most grievous and unjust. But your Committee are most " desirous of pointing out, that so long as copyholds shall " exist, two distinct species of tenure will prevail, mixed up " very generally with each other, and causing much needless " expense and difficulty, both in the investigation of title, and " in the enjoyment and alienation of real property.

" Under these circumstances, your Committee have come " to the conclusion that the abolition of this tenure would not " only be a great public benefit, but should be made if possible " a national object. They are also of opinion that no plan " which merely leaves the option to the parties to enfranchise, " will meet the exigency of the case, and they are, therefore, " desirous of seeing a plan of enfranchisement introduced " which shall have a due regard to the rights as well of the " lord as the copyholder, but which shall be eventually com- " pulsory on both. A plan having this object was submitted " to your Committee, which will be found in the Appendix; " but your Committee entertained a strong opinion adverse to " the system of arbitration suggested in the paper alluded to. " It has, however, appeared to them that the Tithe Com- " mission, which has been recently established by Act of " Parliament, might be rendered available, as affording a " tribunal well qualified to deal with this important subject. " The Tithe Commissioners have for some time pursued an " inquiry of an analogous nature, and have at their disposal " a machinery adapted for adjusting the rights of all parties " interested in copyholds. Your Committee are, therefore, " happy to state, that the Tithe Commissioners having been " applied to, have intimated an opinion that they could under- " take this duty advantageously; and your Committee beg to

" refer to their evidence on this subject, which they deem " highly satisfactory.

" In conclusion, therefore, your Committee look forward " with confidence to the speedy and entire abolition of this " tenure, as a means of greatly simplifying and improving the " law relating to real property. They earnestly desire that " measures may be speedily taken to accomplish this object, " with reference as well to lands of customary as of copyhold " tenure; it appears to them that the best mode of effecting " it would be by giving every facility to enfranchisement for a " short term of years, and that after that period the enfran- " chisement should proceed on the compulsory principle; and " they recommend that a Bill having this object should be " introduced in the next session of Parliament.

" 13th August, 1838."

The gentlemen who composed the Select Committee were: The Attorney-General, Sir Robert Peel, Mr. Goulburn, Sir Edward Knatchbull, Sir James Graham, Sir William Follet, Mr. Yorke, Mr. Darby, Mr. Freshfield, Mr. James Stewart (Honiton), Mr. Hayter, Mr. Lynch, Mr. Duckworth, Mr. Aglionby, Mr. Strutt, Mr. Shaw-Lefevre, Mr. Ayshford Sanford, Mr. William John Blake, Lord Viscount Eastnor, Mr. William Miles, and Mr. Wrightson.

Sir,—I have had the honour of reading the letter of " M.P." in your paper of the 21st inst.

The Report of the Commons Committee, quoted by the honourable member in defence of the present Bill, dwelt upon the check to improvement which is frequently occasioned when the fine happens to be of the particular kind which is called " arbitrary "; upon the heriot; upon the title to copyhold land; and upon the virtually joint interest in minerals. The Report desired that enfranchisements generally should be authorised, and that they should be effected through the tribunal of the Tithe Commission, and not by arbitration.

With no certain escape from an increase of the above-mentioned fine, and with the late Sir Robert Peel apprehensive (it has been stated) of the seizure of the " Chapeau de poil " as a heriot, it was only natural that a majority of

the Committee of which the right honourable baronet was a prominent member should have looked upon copyholds as an unmixed evil, and should have ignored the excellence of a copyholder's title. But the power of enfranchisement conferred upon copyholders by the subsequent series of Copyhold Acts has enabled them to rid themselves of the copyhold tenure when it may have become inconvenient to them; and they have done this in large multitudes, and done it by arbitration after all, and without caring to have recourse (except in a small minority of cases) to the Commission which the Committee had desired should adjust the respective rights, but which exists, however, as an advantageous court of appeal.

The only countenance which the Report gives to the present Bill, is the assertion (made in the circumstances of those times), that "no plan which merely leaves the option to "the parties to enfranchise would meet the exigency of the "case." It may well be doubted whether the Committee would have formed that opinion if they could have foreseen the extent to which copyholders would avail themselves of the option to enfranchise which the Committee so wisely recommended to be at once conceded to them. Anyhow, after half a century of additional experience, we are not to be bound by that expression of an opinion. Whether enforced enfranchisements, instead of optional enfranchisements, are necessary, is just the main question which the promoters of the Bill are now asking Parliament to decide; and upon this, and fees, and some other points, you favoured me with the opportunity of commenting in your paper of the 7th instant.

The appeal made by "M.P." to the Report of 1838 is, however, a calamity rather than a blessing for the Bill, for it exposes an unfortunate fact. Of the several difficulties occasionally arising in copyhold tenure and specified in that Report, there is only one from which a way of escape is not ensured in the present option of enfranchisement; and this one difficulty the Bill makes no attempt whatever to remove. I refer to the complication as to minerals when one or other party is unreasonable. A single clause upon this subject, and adapted to the case of optional enfranchisements, might be most happily exchanged for about a score of wearisome sections in the Bill, which have been devised in order that the present

business relations between lord and copyholder may be destroyed whenever both parties are desirous of preserving them.

The Bill is, by the way, an impressive development of that interference with liberty of action by individuals, towards which there is an excessive tendency in some of our later legislation, and in much more that has been proposed. I should, indeed, be unable to deny that in this way we are but following the practice of the two other biggest empires in the world, where most things are controlled by gigantic Government Departments, and where people are educated to pattern. If we go much further along the road thus entered upon, we may expect to be as thoroughly looked after as are the Russians, and to become as inventive as the Chinese.

I am, &c.,

March 25th, 1885. A LOOKER-ON.

SUMMARY OF SUBJECTS DEALT WITH IN THIS PAPER.

	PAGE.
History and leading provisions of the Bill	33
Costs of Enfranchisement—	
Stewards	40
Land Commissioners	40
Valuers, &c.	41
Form of compensation for Enfranchisement	43
Rights reserved in 1852 Act, s. 48—	
Sporting	44
Minerals	44
Calculations of compensation for Enfranchisements, as appearing in the Proceedings of the Select Committee	46
Annual value of copyhold tenement	47
Fines-Arbitrary	47
The Official Table	48
Variety of intervals between fines	51
Allowance for existing tenancies	54
Fines-Certain	59
Fines of mixed nature	59
Fines due also on death of the lord	61
Building Land	61
Change of Tenure :—Escheats, Forfeitures, and Licenses to demise	63
Quit-rents	64
Heriots	64
Timber	66
Enfranchisement Table	67
Rules now proposed for adoption therewith	72
Appendix	75

DISCUSSION.

Mr. Christopher Oakley (Fellow) had much pleasure in proposing a vote of thanks to Mr. Smyth, but would not attempt to discuss the Paper on that occasion. He thought that all the Members were greatly indebted to Mr. Smyth for the vast trouble he must have taken in preparing so very valuable and exhaustive a Paper. There was probably no one, either in or out of the Institution, who was better qualified to deal with the subject than Mr. Smyth. He had made it his special study, and had given the Institution the advantage of his great knowledge and experience on a previous occasion, and that information he had now added to largely.

He desired to express his opinion that if anything could be done to facilitate and hasten the enfranchisement of copyhold land, it would prove a benefit to all interested, if it could be done with justice to all parties. He thought it very desirable that all copyholds should be enfranchised within a fixed time.

He had to deal, some years ago, with some copyhold property in the manor of Hampstead, the lease of which contained a clause binding the lessee not to expend any money on improvements, the object being, from a short-sighted policy, to prevent any additional money being put in the pocket of the lord of the manor.

He had, also, some years ago, to act for a client upon whose death eighty-four heriots were claimed on his copyholds—eighty-four beasts being seized 200 miles from where the copyhold land was, and he had to compromise those heriots and afterwards to sell the property. He found the copyholds so extensive and complicated that he advised his clients to enfranchise them before selling, on the ground

that buyers might be deterred from purchasing on account of the nature of the tenure.

If the Institution could do anything by discussing the subject to promote enfranchisements, it was much to be desired that it should do so. It was a subject peculiarly within the province of Surveyors, and he was of opinion that copyholds would never disappear unless enfranchisement was carried on more rapidly than it was likely to be unless some further legislation took place.

Mr. C. J. Shoppee (Fellow) said he had much pleasure in seconding the vote of thanks to Mr. Smyth for his very able Paper, and in the absence of Mr. Ryde, who was unable to remain till the close of the Meeting, begged to move the adjournment of the discussion until the 11th January.

The President observed that, the Paper being one which required very careful study, it would probably be for the convenience of the Members if the discussion were adjourned.

The vote of thanks having been carried unanimously, the motion for adjournment was then put, and agreed to by the Meeting.

Paper 134.
No. 227.

THE COST OF PRODUCTION AND THE VALUE RECEIVED FOR OUR VARIOUS FARM-CROPS.

By A. D. WELLS (Associate).

Read at the Ordinary General Meeting of The Surveyors' Institution, *Monday, December 7th*, 1885.

THE PRESIDENT (MR. E. I'ANSON) IN THE CHAIR.

The Paper I propose to read to you this evening seems, from its title, to embrace a very wide area; but if I limit the scope of my inquiry, I trust your patience will outlast the reading of my Paper.

I ought, perhaps, to explain my reasons for venturing to address you to-night. It might very well be objected that a young man like myself should not presume to instruct professional men older and wiser than himself. My excuse is, that in the list of Honorary Members and Associates of the Institution, in January 1884, I failed to find the name of a single farmer. There were noble lords, barristers, Queen's counsellors, members of Parliament, and others, who may, and probably do, combine farming with other occupations, but I did not find one real farmer, whose only business it is to till the soil and rear flocks and herds. As this was the case with the Honorary Members and Associates, I naturally came to the conclusion that at that time there was no practical farmer, and farmer alone, besides myself, connected with the Institution. Therefore when you did me the honour to elect me an Associate in May 1884, I thought

the facts, figures, and conclusions of an unadulterated farmer might be acceptable to at any rate the younger men.

Again, I doubted the wisdom of a farmer attempting to give an opinion on any matter, much more on rural matters, for I read in a recent number of a popular magazine an article written by a clergyman whose powers of observation are considerable, and whose authority on common objects of the country is unimpeachable, that "the stupendous ignorance and dense obstinacy of the tillers of the soil, whether masters or men, is absolutely appalling, and can hardly be realised except by living among them"; but, as this same gentleman has, on a previous occasion, expressed his preference for the flavour of rat-pie to that of rabbit-pie, I trust you will accept his statements with a grain of salt. At any rate, I hope my Paper may be of some small practical use in corroborating, if not in forming, a judgment as to the present value of land, and I trust you will accord me the indulgence which amateurs claim from professional men.

I propose, in the first place, to lay down definite rules for estimating the cost of production of farm-crops, which rules are necessarily somewhat arbitrary, variety of circumstances often making all the difference. Rent of the best arable land in the Midland Counties, when wheat was worth an average price of 56*s.* per quarter, was about £2 an acre, and the rent-charge in lieu of tithe was and is about 10*s.* extra an acre; to this must be added a charge for local rates at 2*s.* 6*d.* in the pound for the year, or 3*s.* 6*d.* if a school board rate be included. I propose, then, as a basis of my calculations, to make 40*s.*, 10*s.*, and 5*s.* = 55*s.*, the annual charge for rent, tithe, and rates, an acre. I need not, now, stop to prove that the first of these items, viz., rent, must be what is left for the owner of the soil, after the labourers and tenant have been paid. I cannot endorse any new

doctrine, that rents are to be artificially propped up or pulled down by the Legislature. I prefer to hold to the old doctrine, that a thing is worth what it will fetch, neither more nor less; and if no tenant can be found to undertake a farm at 55*s.* an acre for rent, tithe, and rates, the landlord must take what he can get, whether his share be 40*s.*, 30*s.*, or 20*s.* an acre.

I do not say that the price of corn, or sheep, or cattle, must of necessity rule the rent, because various advantages and disadvantages of locality must also be taken into account; but, unfortunately, the owner—either in ignorance of the effect a depreciation in the value of grain has on the receipts of the tenant, or wilfully shutting his eyes to what he knows in his heart of hearts to be a fact—too often elects to try the market, with the result that advantages are given to a new tenant which were denied to the old, the landlord, after all, often having reason to lament that "the old was better." Before I leave this question of rents, I must say a word about tithe, which surely is only another name for rent so far as a tenant is concerned, and, whether payable to a college, a religious body, or a layman, is no hardship whatever on a tenant. I fully admit that what was for many years considered to be a good bargain for the landlord, has now turned out to be a very bad bargain indeed for him; but that the fall of the market should be considered a sufficient reason for repudiating a purchase or sale, is contrary to the first principles of business. As regards rates, I think the owner of the soil has a just cause of complaint that his property should almost entirely bear the expense of providing various necessaries for the advantage and enjoyment of all. The special advantages which landowners formerly enjoyed, in the way of protective duties, were then good reasons for special charges; but, now that the advantages are taken away, the various unfair charges cannot in common fairness remain.

Immediately after rent comes manure, and again I must arbitrarily fix the cost of a ton of farmyard-manure. *I estimate its value* at *7s. 6d.*, and ask you to allow me to consider one ton of straw to make three tons of manure. Farmyard-manure is, in conjunction with the folding of sheep on the land, the principal means of restoring fertility to cultivated land impoverished by the maturing and the removal of crops from the soil which produced them. Shakespeare says—

> The earth's a thief,
> That feeds and breeds by a composture stolen
> From general excrement.

And a still more ancient writer says, "Where no oxen are, the crib is clean; but much increase is by the strength of the ox."

This renewal of fertility is unnecessary for the production of corn-crops in a virgin soil; but immediately the hungry cereals have assimilated the nourishment accumulated by the successive growth and decay of prairie-grass, or other vegetable matter, so soon, if that land is to remain in cultivation, must a renewal of fertility be obtained by rotation of crops and manure. Mr. Prout, some few years ago, gave an account of a most successful plan he had adopted of continuous cropping and restoring the exhaustion by what are commonly called artificial manures: he went even so far as to sell all the straw and the small quantity of clover he annually produced. And, again, Mr. Oakshott, in his seed-corn circular for this year, suggests a rotation of cropping which, in his opinion, is better calculated to pay the farmer than the ordinary mode of sheep-folding and a large root acreage. This last I consider merely an eccentricity of rotation; but Mr. Prout's system had the great merit of originality, and, for a time, deserved the highest award, for it paid. I fancy this was principally because straw could be sold off at a high price, and the soil was naturally one of those

clay soils that it is difficult to exhaust below a certain point.

You will, I hope, excuse me if I pass for a minute from general farm matters to personal experience. On my father's farm, I well remember his purchasing, twenty years ago, some of Odam's blood-manure; it was sown for oats after wheat, but no difference could be seen where the artificial manure went and where it did not go. I was staying a few years afterwards on a spur of the Chiltern Hills, in Oxfordshire, with a farmer, who was one of the first to use guano for the production of turnips, and this gentleman told me that the guano produced such a wondrous effect on the growth of turnips, that persons stopped as they were driving along the road to inquire what made the turnips grow in such an extraordinary manner; in fact, it revolutionised farming in that district, for alternate cultivation of turnips and corn became profitable; later on, this gentleman used half-inch bones dissolved with sulphuric acid, for the production of turnips.

Two years ago I wanted to grow turnips on some cold and very heavy-working soil. I had been disappointed previously in my crops of turnips in this soil, so I forwarded a sample of it to the late Dr. Voelcker, asking him to give me an account of the component parts, and inform me what was needed to make the soil grow a fair crop of turnips. Dr. Voelcker, in return, sent me a long description of my soil, and, although he termed it a partial analysis, I considered it a very full one. His advice was, drill with the seed 3 cwt. of mineral superphosphate per acre. I drilled my swedes and turnips with 2 cwt. of Odam's superphosphate in good season, on a capital tilth, and had a perfect plant; in the middle of the swede-field, however, I had stopped the manure from running, and about half an acre was seeded without the superphosphate, likewise a portion of the turnip-

field. The season of 1884 was propitious for root-crops; but never, from the day the plants came through the ground to the time they were fully grown, could I see the least difference between the manured and the unmanured parts: perhaps the turnips were rather larger where there was no artificial manure. With potatoes, also, I tried at the rate of 2 cwt., 4 cwt., and 6 cwt. per acre, and, although I weighed the rows of potatoes manured and unmanured, growing side by side, I could not find the least appreciable difference. I am, therefore, forced to the conclusion, and my general experience bears it out, that if good land is in fairly good heart or condition, superphosphate will not have any effect. But if the same soil by cross-cropping has become very impoverished, as was the case with Mr. Prout's style of farming and Sir John Bennett Lawe's experimental plots, then it will make its mark.

I am now about to propound a theory which I cannot substantiate. It is this—that the effect or non-effect of certain manures on a growing crop should be the test of the amount of fertility in that soil, for the purpose of estimating the value of the unexhausted fertility which belongs to an outgoing tenant, who claims payment for unexhausted manure under the Agricultural Holdings Act.

This I throw out as a mere suggestion, in place of the cumbersome mode of valuing these unexhausted manures by delivering vouchers and declarations of guaranteed purity and power, given, perhaps, two years previously.

But to return to farmyard-manure. I fix its value at 7*s.* 6*d.* per ton, because that is the price at which London stable-manure can be delivered by rail 50 miles into the country; and although, probably, the best manufactured farmyard-manure would not be so good as London stable-manure, yet the farmer has it on the spot, and this saves the expense of carting from the railway-station.

Perhaps I ought not to pass by the subject of sewage-

manure; for, doubtless, herein lies the future of farming. That the crops of wheat raised by the exhaustion of the fertility of virgin soils in other lands should be cast by us into the sea, while our agriculture languishes and starves for lack of this very fertility, is beyond all comparison the most fearful waste that was ever perpetrated. But, notwithstanding countless theories and endless practical experiments, we have yet to find out a way of dealing with this treasure so that farmers will pay a price for it which will cover the expense of salvage and railway charges. Lord Bramwell's Committee proved beyond doubt that the commercial value of sludge was so little that it would not bear carriage. No one would deserve better of his country, or be more likely to make his own fortune, than the man who could arrange this matter so that our fields could get the competing foreigner's fertility which he now, with a prodigal hand, is only too happy to get rid of.

Chalking, liming, and marling are often most beneficial in their effect upon cultivated lands; but, inasmuch as, in common with draining, turf-burning, and warping, these operations do not constitute ordinary, but rather extraordinary, farming, I do not propose to touch on them here. With regard to the price at which sheepfold-penning should be valued for the purposes of this estimate of the cost of production of farm-crops, I felt some hesitation as to whether the root-crop should be credited with the value of the manure left by the sheep, as well as with the mutton and wool produced, or whether the increased value of the sheep consuming the roots should be the only item on the received side of the root-crop balance-sheet, thus allowing the inevitable debtor-balance which must ensue in this case to run on to the subsequent crop. I decided on the former course, on the principle that value, or money's worth, should be represented by figures, and that each crop must be balanced by itself.

I propose, then, while valuing one ton of farmyard-manure at 7*s.* 6*d.*, to value the manure, or restorative fertility, of each ton of roots consumed on the soil at 2*s.* 6*d.* This has been set as high as 5*s.* a ton; but when I consider that where a 16-ton crop of swedes or turnips is carted off the land, the succeeding crop of barley is at the rate of 4½ qrs. per acre; and that where the whole 16 tons is fed on the ground, the farmer cannot rely on more than 5½ qrs., or 1 qr. per acre more, if this extra quantity of corn is worth £2, it follows that 16 half-crowns is the full manurial value of a 16-ton crop of roots. And I propose to take the manurial value of a crop of vetches on the same standard—2*s.* 6*d.* per ton for a 5-ton crop, or 12*s.* 6*d.* an acre.

Cultivations are the next point, and this has been considered so important a feature in the production of crops, that Lois-Weedon imagined proper cultivations were sufficient to produce successive corn-crops without manure of any kind. Undoubtedly, the mechanical pulverisation of stiff clay soils liberates fertility which would otherwise be unattainable by the roots of farm-crops, but there is no creation of plant-food. But although the Lois-Weedon theory may be exploded, the fact remains that the farmer may farm the best land, manure his soil in the best manner, and plant good seed; but, unless his cultivations are equally good, he fails to reap a full harvest. In what, then, do good cultivations consist? Is it not (1) in ridding the ground of noxious weeds; and (2) in furnishing a suitable seed-bed?

First as to ridding the ground of noxious weeds. Pre-eminent in this class is the couch, twitch, or quitch-grass (*Triticum repens*). This plant, I always think, first came into the garden and farm with the thorns and thistles consequent on "the Fall"; it is, *par excellence*, the farmer's chief enemy, especially in good soil, and warm but not hot

climates. It has, however, I am told, a pecuniary value, for the seed is exported to Australia to improve grass-land; and this not, as we English farmers would be apt to suppose, as a cheap adulterant, but for the express purpose of securing a green blade of grass for sheep in times of prolonged drought. On poor thin hills, also, quitch-grass grows comparatively slowly and is more easily killed; nor will it flourish in extreme northern latitudes, but in middle and southern counties it soon makes the slovenly farmer its slave, and eventually sucks him dry.

As its name, "*quitch or quick*" (*quick and dead*), implies, it is always alive, even lengths of one inch being sufficient for the production of a large plant in a marvellously short time, and the seed, if allowed to fall on the ground, will produce annually seeding plants for the next seven years. How, then, can this pest be got rid of? By ploughing sufficiently deep to go under the running strings or roots, and by then freeing these roots from soil and allowing the sun to bake them to death; or by collecting the roots and carting them away, or by burning them. But if there be the smallest germ left, or any seed couch-grass left in the soil that has not germinated, the process must be repeated again and again, year after year, at an annual cost often nearly equal to the rent paid for the land. One other mode of getting rid of this most pressing and unpleasant neighbour, is to plant some crop which will, by its luxuriant foliage, shut out the light and air from the marauder and so stifle him; notably, a crop of Scotch Champion potatoes.

But although, on entering a foul farm, a farmer cannot bare-fallow the whole of the arable land, yet this is the best, the cheapest, and most effectual way of reducing the quantity of material to be dealt with, to be followed the next year with some crop which will permit the careful farmer to follow up his temporary advantage, and, lifting the

sprangs that show themselves with a hand-fork, to thoroughly exterminate all germs arising from short lengths of roots.

Having obtained the mastery, the farmer who wants to cultivate his land cheaply must, on all and every subsequent occasion that presents itself, search for, dig up, and carry away the incipient growth. I know of some sandy soil where the couch-grass grows as rapidly in the winter as in the summer, and a thick couch or bed of grass with small hairy roots quickly covers the surface. This class of soil is much improved by an application of caustic-lime, as it checks the growth of this small sort of quitch, and a more manageable species takes its place.

Without now referring to rotation of crops, I think this is the place to say how fruitful a source of foulness of land, and what an enormous start of the farmer, quitch gets during the clover-crop. The clover-seed is planted in the spring among a corn-crop; clover may, and sometimes does, cover the ground with a thick carpet-like plant, but ofttimes it does not, and clover and young quitch-plants struggle side by side for existence for eighteen months, when the ploughshare gives the *coup de grâce* to the clover-plant by burying it underground; but this topsy-turvy process is giving fresh life to the quitch, which renews its race for pre-eminence for another year, only with wheat for its rival instead of clover, and by the time the ordinary farmer, in the war-month of March, is ready to do him battle, a period of thirty-six months' cessation of hostilities has given the *Triticum repens* full occupation of the field. Is he not rightly termed "quitch," or living?

If a farmer asked my advice about growing clover on land infested with this plant, I should say, plant as small an acreage of clover as you can; if, after harvesting your corn-crop, you have not a full plant, break it up and plant something else; but if directly your first and second crops of

clover are harvested, plough up your clover-stubs, and do not plant wheat, which for so many years has invariably followed clover, but potatoes or a crop of mangolds. I know that men of "light and leading" have advocated the laying-down of land to clover, saintfoin, or mixed grasses for a long period, and then breaking it up for a corn-crop; this plan may save money for the time the land is uncultivated, but, when the time comes for it to revert to tillage, the cost of freeing the land from weeds and weed-seed, must, I think, eat up more than the profit. In fact, I believe this is the way not to do it.

The noxious weeds which rank next in importance after *Triticum repens* are docks, thistles, and charlock. Docks and thistles are better dealt with by a ploughshare than by a mere cultivator. Docks need never get numerous if they are lifted by hand once a year, either when they show among the young growing corn, or before the root-crops are consumed in the ground. The fertile source of docks is dock-seed, which is very prevalent in all sorts of clover-seed; and as seed-merchants cannot always send the bulk like the sample, that particular lot being perhaps sold out, they are consequently obliged to send the nearest they have left in stock. The farmer should always examine the bulk of clover-seed before he sows it, lest he should find, when too late, that he has paid for an admixture of dock-seeds. Thistles growing in arable land root down sometimes for yards, and the ploughshare and weeding-paddle are the only means of preventing their seeding. Charlock, or wild black mustard, can be exterminated by repeated hoeings, harrowing, and general cultivation; but although, if allowed to grow in a rampant fashion among any crop, it has the effect of drying up the moisture, and so starving the soil, yet its evil effect can be minimised by hoeing between the crop of growing corn.

It is high time I now fixed some average charge per acre

for digging quitch, lifting dock, spudding thistles, and hoeing corn. I estimate that, when a farm is really clean, a man can walk over half an acre in a day lifting with his fork and carrying away all the quitch that will be found there in a year. This, then, is at the rate of 5*s.* an acre per annum. Dock-lifting I estimate at 1*s.* an acre for all corn-land, and thistle-spudding at 2*s.* an acre for all corn-land. The hoeing of corn-crops is often the best money a farmer can spend, certainly in charlock districts. This, if done by hand-labour, costs about 5*s.* an acre; if with a horse-hoe the width of the corn-drill, 2*s.* an acre would be a fair price. I have not exhausted the list of noxious farm-weeds, but the hoe would, I think, dispose of them without extra cost.

The second half of good cultivation is the mechanical treatment of the soil, so that the seed-bed shall be sufficiently mouldy to hide the seed from the light and to encourage the rootlets to take hold, but not too fine, lest a dashing rain should seal the surface.

The plough is the farmer's best instrument, and I still give the preference to horse-ploughing, and estimate the cost of ploughing an acre of average land at 12*s.* Steam-plough contractors are generally willing now to undertake work at 8*s.* an acre, leaving the farmer to supply the requisite coal and water, equalling 10*s.* an acre. I have fixed upon the higher sum of 12*s.* for the purpose of my calculation, and I propose to make this the basis of calculation for all horse-labour.

Harrowing with three horses and a boy the work will cost 1*s.* an acre, rolling 1*s.* an acre, drilling 2*s.* an acre. Horse-hoeing, with an implement taking a single row of beans or roots, about 22 or 24 inches apart, 2*s.* an acre. Heavy cultivators, or drag-harrows, an average cost of 4*s.* an acre. The cost of harvesting hay and corn must also be arrived at. Five horses with three waggons, two boys to drive,

one man to pitch, and a lad to load, would get over half an acre an hour of hay, and an acre an hour of sheaved corn; but as hay and harvest wages are nearly double at these seasons, the cost must be increased in proportion, so that 6*s.* an acre is a fair charge for hay, and 3*s.* is a fair charge for carting sheaved corn. The manure-cart is a heavy part of the farm-horse's work; and assuming the average distance of the field to be half a mile from the homestead, it must cost 10*s.* an acre to place the manure on the fields, or at the rate of 1*s.* a ton, and reckoning the cost of filling at 3*d.* per ton, and spreading at another 3*d.* per ton, the total cost is 15*s.* an acre. There is also the expense incurred in carting roots from the field to the homestead: a total cost of 9*d.* a ton is equal, for a 20-ton crop of roots, to 15*s.* an acre. The delivery of corn to the mill or malthouse is not the expense it was before railways were made, nor half the expense it was in the good old days before Mr. McAdam invented hard roads. Then small loads of corn were drawn by many horses in heavy waggons for miles along lanes and so-called roads without any bottom, except the bottom of the deep wheel-tracks, the horses all harnessed at full length because they could not walk on the "kecker," or higher part of the road between the wheel-tracks and the horse-path. The delivery of corn was then, perhaps, the *plus grand ouvrage.* Now 5*s.* an acre must be a full price to charge for this work of delivery to the nearest mill, malthouse, or railway station; not that the rates and charges of those monopolists, common carriers, ought to be omitted from the calculations (it is not every farmer who can do without the railway companies), but the calculations would be too intricate. The next point is the cost of manual labour; and putting the wages of a day-labourer at a minimum of 2*s.* 2*d.* a day, his average earnings for the year would be about 18*s.* a week, and the yearly amount of manual labour on an arable farm would be

probably about equal to a 40*s.* rent, a 10*s.* tithe, and a 5*s.* rate per acre. But as I am now proposing only to deal with the cost of production of our farm-crops, I need only mention the labour employed in the management of these crops, as we have already settled the manuring, the ploughing, the planting, and the weeding. The first item is the cutting of the corn in the harvest-field, binding and stacking, or stooking. This can be done by hand at an average cost of 14*s.* an acre for wheat, and 12*s.* for barley, oats, or beans, and 6*s.* for peas. This I consider cheaper than cutting the corn with the self-raker reaping-machine, and binding by hand the loose bundles into sheaves, when horse-labour, extra risk from wet weather, machine-depreciation, and, perhaps, two bushels of extra grain wasted per acre are fairly calculated. With regard to the self-binding reapers, they can do the work undoubtedly cheaper than it can be done by hand, when the crop is upstanding and the ground moderately level. But I must ask you to allow me to stand by my figures, based on hand-labour calculations. I have already calculated the cost of the horse-labour and carters employed in carting corn-crops from the field to the homestead, but not the cost of men stacking, which I reckon at 2*s.* 6*d.* an acre, and 1*s.* 6*d.* an acre extra for straw-drawing, thatching, rick-pegs, and string.

The next operation is thrashing, which will cost 2*s.* 4*d.* a quarter for wheat and barley, if the steam-thrasher be employed, and it may, perhaps, be news to some to find that in my own district hundreds of men are employed throughout the winter in thrashing barley with the old-fashioned flail, at about the same cost as the steam-thrasher, viz., 2*s.* 4*d.* per quarter. The flail has the advantage over the machine, that it affords regular employment for labourers in wet or dry weather. The hand-thrashed barley is more valuable to the maltster, because the kernels are not bruised

or broken, it measures more, and weighs less; because, as previously explained, the beard is not cut off so short, and, above all, only a small quantity of straw goes from the barn to the cattle or sheep yard every day, in the best condition for foddering. Beans and peas can always be thrashed cheaper by the flail than by machinery; so I put them at 2*s.* 2*d.* per quarter. The last item for corn-crops is winnowing; and, although a finishing thrashing-machine is a great assistance, no farmer is wise if he neglects to winnow once if not twice after the grain leaves the machine; so that I estimate this extra winnowing at 3*d.* per quarter, or, say, 1*s.* 6*d.* an acre.

The cost of labour incurred in root-crops is also very great. The first work the day-labourers have to perform, is to single, with the hand-hoe, the plants of mangolds, swedes, or turnips, for which work they would probably be paid 6*s.* for the first and 4*s.* for the second hoeing. The next work is pulling the roots, which, in the case of a 20-ton crop of mangolds, would cost 6*s.* an acre; in the case of swedes, the pulling and cleaning would cost 10*s.* an acre.

The only remaining item of expenditure in the cost of production is the seed, and this I propose to charge at the same price the best corn is sold at, for although I have great faith in now and then obtaining a complete change of good seed, yet the difference is so small at per acre, that I do not think I am justified in charging a higher price for seed-corn. With regard to clover-seeds, I shall fix on 12*s.* an acre as a proper price for good clean seed; mangolds, I shall charge at 8*s.* an acre, and turnip, rape, and swede seed at 4*s.* an acre.

The second part of my subject is, The value received for our farm-crops, and this our President referred to in his Opening Address as a very painful subject. That it is painful, very painful at the present moment, is an undoubted fact;

but, although some may draw comfort from the account of the glories of the past, yet the present, and above all the future, is the great cause for anxiety. I fully admit that, given the same conditions in the future that have existed in the past, low prices will in the future, as in the past, be succeeded by higher prices. But the painful thought presses, Are the conditions the same? are they not entirely different? Distance has been annihilated by steam, and it costs, perhaps, more to send our home-grown wheat to London than it does to send wheat from New York to London.

And how about the millions of wheat-growers in India, who have no wish for a higher remuneration than one penny a day? Is it likely our labourers can compete with this? And supposing that the prairies of America became exhausted twenty years hence by repeated cropping, is the wheat-belt of the world exhausted? I think it possible we have only as yet touched the fringe.

I have certainly thought that perhaps agriculture could be again restored to prosperity if we imported Chinese labourers to do the farm-work, and, if the true principle be to allow everything in the world, whether labour, the products of the field or the mine, to find its natural level, which is what I understand by the term free trade, this would be a legitimate way of making both ends meet, or at least would permit inferior lands now worth no rent to be maintained in cultivation.

My scheme, however, has lately received a serious check, for, although Australians, Californians, and others have often objected, and that forcibly, to the employment of Chinese labour with them in their handicrafts, and have even succeeded in placing a poll-tax in some places on each Chinaman who lands on their shore, it was only lately that John Chinaman turned the tables on his white fellow-workmen, for in the cigar manufactories of San Francisco the Chinamen the

other day struck work because they objected to other nationalities being employed with them.

With regard, then, to this very painful subject, as Mr. I'Anson terms it, it would seem to be best to adopt the view of Professor Fream, of the College of Agriculture, Downton, who in his Paper on the agricultural situation, read before the British Association last September, said "that the boldest course to take is, perhaps, to regard this depression as normal and permanent, and then discover, if possible, how this new order of things may best be faced." I hope presently to suggest to you alternative rotations of crops which will leave a small profit to landowner and cultivator, even at present prices; but I must now proceed with the value received for farm-crops.

I show in Table 1 * the prices wheat and barley sold for from 1831 to 1840, both inclusive, also the annual yield in quarters and bushels per acre.

The second table dates from 1850 to 1859, also both inclusive, and contains records of wheat and barley grown and sold during that period. These accounts were kept by my father, who farmed his own estate for a period of fifty years, and who not only farmed it very well, but, as I think you will admit, kept accounts very well.

The third table is my own experience during the years 1871, 1872, and 1873 on a large hill-country farm, and included the harvest of that very dry summer of 1870 which proved so disastrous to thin dry soils, and my own experience continuing on a heavy land in the valley of the Thames from the year 1874 to the last year in which the accounts are at present made up, viz., 1885, which includes the previous harvest of 1884 only. I shall naturally be asked, What deductions do you draw from these somewhat elaborate accounts?

* The Tables referred to will be found after page 111.

The first table seems to make one's mouth water for such years as 1838, when wheat made an average price of 75*s.*, and barley at the same time yielded 7½ qrs. to the acre. Those must indeed have been fine times for the farmer. I also notice that my father's system of farming seemed to permanently enrich the land, for the first table shows an average yield for 10 years of only 4 qrs. 3 bus. per acre, while the second table shows an average yield for that 10 years of over 4 qrs. 6 bus. But in the year dated 1850, which is the harvest of 1849, the wheat seems to have realised only £6 15*s.* 5*d.* per acre, both quantity and price being very low. On the other hand, the Crimean war gave land a lift, for 73*s.* 2*d.*, 75*s.* 9*d.*, and 66*s.* 7*d.* were average prices for the three years 1854, 1855, and 1856. I notice also that the year dated 1853 had a bad crop of wheat, only 3 qrs. 2 bus., but the price, viz., 80*s.*, made a good average value per acre.

With regard to the table of accounts kept by myself, and showing what I have done since I commenced farming at the age of 21, you will notice that the first three years show a very small yield—very different from the preceding tables or the subsequent tables of yields. This shows the difference between really good land and a lower middle-class land. The farm I occupied for the first three years of my farming life was of this latter description; the rent and tithe together amounted to about 25*s.* an acre. The crop grown in the hot dry summer of 1870 was my first harvest, and the winter-planted corn yielded badly, but the spring corn worse. I reckoned that, on the 600 acres, I lost in that dry year £2,000, the second year I calculated I neither gained nor lost money, and the third year I made a profit of £1,000; so that my net loss on the three years was about £1,000. As I then had an opportunity of returning to my father's farm, I left the hills, lest I should experience another dry summer.

The next five years I spent on my father's farm; the rent was 40*s.* an acre, and the tithe 10*s.* The wheat averaged about 4½ qrs., and sold at about 54*s.*; and the

barley averaged about 5 qrs. 2 bus., and selling at nearly 45*s.* realised about the same value per acre as the wheat, viz., £12. I was obliged after this time to give up my tenancy of the larger portion of my father's farm, and I added to the small portion I still retained about 500 acres of heavy land; and the result is shown in the third table, from 1879 to 1885 inclusive. I ought perhaps to explain—although I fear I shall weary you with so much egotism—that this latter farm was not rented so highly as my father's farm. When I entered, the rent and tithe were together 40*s.* an acre. This has since been reduced. The year 1880 was the result of the harvest of 1879, and as I fled from the drought of the hill country which I experienced in 1870, so I had reason to wish myself back there again, when in 1879 the rain came down persistently and soaked my heavy land through and through, day after day, week after week, and month after month.

However, the crops were eventually secured, and, although the yield was not large, the prices were fairly good; and you will notice that in the column opposite 1880, which represents the harvest of 1879, the average value of wheat and barley together was £9 3*s.* 5*d.*

Of course, this was great cause for congratulation, and the farmer thought, this was only one year, and that one disaster would check the undue greed for land, and keep competition from unduly raising rents; but, so fickle is fortune, that what we regarded as but one disastrous year has been followed by five other bad years, each worse than the last, and the average value of wheat and barley per acre on land that was worth 40*s.* rent and tithe has been — 1882, £10 7*s.* 11½*d.*; 1883, £8 6*s.* 10½*d.*; 1884, £9 17*s.* 10½*d.*; and 1885, £9 14*s.* 10*d.*; and this consequent not on bad yields but on very low prices. It is, indeed, many years since we have had a high price for wheat; in fact, we must go back to 1874, when for one year only it realised 67*s.* 3*d.* per quarter. As against this, barley was over the average price for some years previous to the substitution of the beer-duty for the malt-tax, but since, by this alteration, the

demand for good malting-barley has diminished and this prop has failed, and good malting-barley can now be purchased at 24*s.* per imperial quarter. I am not treating of the prices which the farmer receives for his meat, but the increased value of mutton and beef wonderfully helped to keep the farmer's head above water; but now that sheep and wool are worth together nearly £1 a head less than they were a short time since, this also has ceased to enable the farmer to meet his regular expenses.

I must now place before you in a concise form all the expenses incurred in growing wheat, barley or oats, beans, mangolds, swedes, vetches and rape; and on the other side I shall estimate the probable yield from the tables I have numbered I., II., III.*

Dr.	Wheat.			Cr.		
	£	*s.*	*d.*		£	*s.*	*d.*
Rent	2	0	0	4½ quarters Wheat, at 56*s.*	12	12	0
Tithe	0	10	0	1¼ ton of Straw, at 30*s.*	1	17	6
Rates	0	5	0				
Quitch-digging	0	5	0				
Half Cost of 10 ton Farm-yard-manure applied to previous Crop, at 7*s.* 6*d.*	1	17	6				
One Plough	0	12	0				
One Roll	0	1	0				
Four Harrows	0	4	0				
Drilling	0	2	0				
Two bushels Seed at 56*s.*	0	14	0				
Dock-lifting	0	1	0				
Horse-hoeing	0	2	0				
Thistle-spudding	0	2	0				
Cutting	0	14	0				
Carting	0	3	0				
Stacking	0	2	6				
Thatching	0	1	6				
Threshing 4½ quarters at 2*s.* 4*d.*	0	10	6				
Winnowing	0	1	6				
Carting to Market	0	5	0				
Insurance	0	0	6				
Repairs by Tenant to Buildings	0	0	6				
Replacing of Dead Stock	0	1	0				
Losses among Live Stock	0	1	0				
Loss of Time Wet Days	0	1	0				
	8	17	6				
Profit	5	12	0				
	£14	9	6		£14	9	6

* See pages 112—114.

Swedes.

Dr.	£	s.	d.		£	s.	d.
Rent	2	0	0	Ten tons of Swedes will feed 200 Sheep for one week at 3*d.* a head; or 10 tons of Roots will make 10 stone of Mutton at 5*s.* 4*d.* per stone	2	13	4
Tithe	0	10	0				
Rates	0	5	0				
Quitch-digging	0	5	0				
One Plough	0	12	0				
Four Harrows	0	4	0				
One Roll	0	1	0				
Drilling	0	2	0				
Seed, 4 lbs. at 1*s.*	0	4	0	Value of Sheep-manure left in the ground, 10 tons at 2*s.* 6*d.*	1	5	0
Horse-hoeing twice	0	4	0				
Hand-hoeing twice	0	10	0				
Pulling and Cleaning Roots	0	10	0				
					3	18	4
Insurance and Losses, &c.	0	4	0	Loss	1	12	8
	£5	11	0		£5	11	0

Barley.

Dr.	£	s.	d.		£	s.	d.
Rent	2	0	0	5½ qrs. Barley at 32*s.*	8	16	0
Tithe	0	10	0	One ton of Straw at 30*s.*	1	10	0
Rates	0	5	0				
Quitch-digging	0	5	0				
Sheep-folding Manure left on ground, the residue of 10 tons at 2*s.* 6*d.*	1	5	0				
One Plough	0	12	0				
One Roll	0	1	0				
Four Harrows	0	4	0				
Drilling	0	2	0				
Seed, 2 bushels at 32*s.*	0	8	0				
Dock-lifting	0	1	0				
Horse-hoeing	0	2	0				
Thistle-spudding	0	2	0				
Cutting	0	12	0				
Carting	0	3	0				
Stacking	0	2	6				
Thatching	0	1	6				
Threshing 5½ qrs. at 2*s.* 4*d.*	0	12	10				
Winnowing	0	1	6				
Carting to Market	0	5	0				
Insurance, Losses, &c.	0	4	0				
	7	19	4				
Profit	2	6	8				
	£10	6	0		£10	6	0

Dr. Beans. Cr.

	£	s.	d.		£	s.	d.
Rent	2	0	0	4½ qrs. Beans at 36s.	8	2	0
Tithe	0	10	0	One ton of Straw at 30s.	1	10	0
Taxes	0	5	0				
Quitch-digging	0	5	0				
Half Cost of 10 tons of Farmyard-manure at 7s. 6d.	1	17	6				
Filling Manure into Carts, 3d. per ton	0	2	6				
Carting ditto on to the Field	0	10	0				
Spreading ditto, 3d. per ton	0	2	6				
One Plough	0	12	0				
Four Harrows	0	4	0				
Drilling	0	2	0				
Seed, 2 bushels at 36s.	0	9	0				
Dock-lifting	0	1	0				
Horse-hoeing, twice	0	4	0				
Hand-hoeing, twice	0	12	0				
Cutting	0	12	0				
Carting	0	3	0				
Stacking	0	2	6				
Thatching	0	1	6				
Threshing 4½ qrs. at 2s. 2d.	0	9	9				
Winnowing	0	1	6				
Carting to Market	0	5	0				
Insurance, Losses, &c.	0	4	0				
					9	12	0
				Loss	0	3	9
	£9	15	9		£9	15	9

Dr. Vetches, followed by Rape. Cr.

	£	s.	d.		£	s.	d.
Rent	2	0	0	100 Sheep will eat one acre of Vetches in a week, at 3d. per head	1	5	0
Tithe	0	10	0	Value of Sheep-manure left on the ground, 5 tons at 2s. 6d.	0	12	6
Rates	0	5	0				
Quitch-digging	0	5	0				
One Plough	0	12	0				
Four Harrows	0	4	0				
Drilling	0	2	0				
Seed (Vetches), 2 bus. at 56s.	0	14	0				
Half Insurance and Losses, &c.	0	2	0				
One Plough for Rape	0	12	0				
Four Harrows	0	4	0				
One Roll	0	1	0	100 Sheep, one acre of Rape per week, at 3d.	1	5	0
Drilling	0	2	0	Value of Sheep-manure left	0	12	6
Rape-seed, 8 lbs. at 6d.	0	4	0				
Half Insurance and Losses, &c.	0	2	0				
					3	15	0
				Loss	2	4	0
	£5	19	0		£5	19	0

Dr.	Mangolds.			Cr.		
	£	s.	d.		£	s.	d.
Rent	2	0	0	Twenty tons of Roots will produce 20 stone of Meat at 5s. 4d.	5	6	8
Tithe	0	10	0				
Rates	0	5	0				
Quitch-digging	0	5	0	Twenty tons of Roots fed in the straw-yards will leave a residue of Manure worth 2s. 6d. per ton of Roots consumed	2	10	0
Half Cost of 10 tons of Farmyard-manure, at 7s. 6d.	1	17	6				
Filling, Carting, Spreading ditto	0	15	0				
One Plough	0	12	0				
Four Harrows	0	4	0				
Drilling	0	2	0				
Seed, 8 lbs. at 1s.	0	8	0				
Horse-hoeing twice	0	4	0				
Hand-hoeing twice	0	12	0				
Pulling Roots	0	6	0				
Carting off 20 tons Roots, at 9d.	0	15	0		7	16	8
Insurance, Losses, &c.	0	4	0	Loss	1	3	0
	£8	19	6		£8	19	6

If this is a fair statement—and I am prepared to stand by it—it follows that the usual four-course rotation, carried out in the best and cheapest way, and on the best land, gives the following result, reckoning wheat at the old tithe-computation price, viz., 56s. per quarter; barley also at the tithe-computation price, viz., 32s.; and meat selling at 8d. per lb. wholesale:—

Eight Years' Rotation.

Loss.				Profit.		
£	s.	d.		£	s.	d.
			1st Year—Wheat at 56s.	5	12	0
1	12	8	2nd Year—Swedes			
			3rd Year—Barley at 32s.	2	6	8
0	3	9	4th Year—Beans			
			5th Year—Wheat	5	12	0
2	5	0	6th Year—Vetches, followed by Rape			
			7th Year—Oats or Barley	2	6	8
1	3	0	8th Year—Mangolds			
5	4	5				
10	12	11	Net Profit for 8 years			
£15	17	4		£15	17	4

This profit of £10 12*s.* 11*d.* for an eight-course rotation gives an annual profit of £1 12*s.* 4*d.* per acre, and if the sum of £15 an acre is reckoned as tenant's capital, the percentage he receives is at the rate of $8\frac{3}{4}$ per cent. But the whole point of my argument is this.: Wheat no longer will sell for 56*s.* per quarter, its extreme value now being 36*s.*; and this means a shrinkage in the value of an acre of wheat of £4 10*s.*, or, if spread over four years, a depreciation in the value of land suitable for wheat-growing purposes of 22*s.* 6*d.* per acre. I particularly wish to press the point on valuers and landowners, that if this old-fashioned rotation of crops is to be followed, the best arable land which was worth, and was let for, and yielded a fair profit to the tenant at, 40*s.* rent and 10*s.* tithe, this same land is no longer worth 50*s.* rent and tithe, but 27*s.* 6*d.* rent and tithe; or, if it must be divided, 10*s.* to the tithe-owner and 17*s.* 6*d.* to the landowner. I repeat again that land, like every property, is worth what it will fetch in the market, and circumstances may make it worth a farmer's while to rent land, even at a higher price than it was let at ten years ago; or a private gentleman, or sporting-men, or a market-gardener may be willing to pay a high price for the use of land. But it is simply impossible for a farmer, under ordinary circumstances, to obtain a moderate rate of interest for his money, his time and skill, at any less reduction than the sum I have named. A farmer may be willing to give more rent, because he fondly hopes he shall scrape here and save there, and perhaps he even indulges in the heathenish idea that he may be lucky. But the worst prospect for landlords is, that their tenants should for a long future struggle, but still go downhill, with the consequence that the condition of the land is deteriorated, and the tenant, having exhausted his money, his credit, as well as his stock, eventually succumbs, and the landowner has the farm left on his hands full of weeds, which will cost him perhaps £5 or £10 an acre to get rid of.

It appears to me a truer policy so to adjust rents that it is possible for farmers to live, and, better still, to thrive; for I honestly believe that if an English farmer has money in his pocket he is more ready than any other business-man to invest that money in his business and improve the condition of his land. It will doubtless be objected that prices of wheat will rise very shortly. Of course everyone is entitled to his opinion; but are there any solid grounds for such a supposition? My own experience, as given on Table III., shows wheat gradually declining since 1874 with one trifling exception; and can we reasonably believe that the virgin soil in the wheat-belt of the world is anything like nearly exhausted?

As our PRESIDENT said in his Opening Address, this is a very painful subject, and the disposition of men inclines them to let things slide rather than to face the difficulty. But nevertheless, if, as Professor FREAM suggests, it is best to calculate the present prices as permanent, it would be wiser, nobler, and a happier way to accept the situation and act accordingly.

I have one more point to notice. This four-course system may, in many instances, be improved upon to the increase of fertility and the more perfect condition of the soil. Introduce a clover-crop, which will, before anything else, bring fertility on the land; but do not follow it with a corn-crop, lest my system, at once the cheapest and the best, of ploughing only once for a crop, be rendered impossible by the growth of quitch. Let the clover be followed by mangolds or potatoes, and an oat-crop take the place of half the wheat-crop, or, indeed, let any rotation be followed that will on paper show a net profit, for I am certain if it will not show on paper it will never show at all.

For your forbearance and kind attention pray accept my best thanks.

I.—Average Price of Wheat and Barley for the Years ending Michaelmas.

Year.	WHEAT.						Year.	BARLEY.						Average Wheat and Barley.		
	A.	R.	P.	Qrs. Bus.	Value.	Value per Acre. £ s. d.		A.	R.	P.	Qrs. Bus.	Value per Acre. £ s. d.		£	s.	d.
1831	51	1	19	4 6	65/3	15 10 0	1831	36	0	37	5 7	10 11 10		13	0	11
1832	64	0	28	4 6	55/9	13 5 3	1832	37	2	30	6 2	9 8 3		11	6	9
1833	65	0	7	4 2	52/5	11 2 9	1833	38	1	34	5 6	7 5 0		9	3	10½
1834	71	1	4	4 5	38/–	8 16 6	1834	35	3	21	5 7	9 6 0		9	1	3
1835	71	2	19	4 2	49/2	10 9 0	1835	28	1	38	6 0	9 8 0		9	18	6
1836	64	2	7	4 6	59/–	14 1 0	1836	34	3	3	6 0	10 5 0		12	3	0
1837	49	1	13	3 7	62/8	12 3 6	1837	47	0	24	6 2	10 4 0		11	3	9
1838	65	2	36	4 0	75/–	15 0 0	1838	43	2	24	7 4	14 3 0		14	11	6
1839	64	3	35	4 2	72/–	15 6 0	1839	37	2	16	6 1	13 0 0		14	3	0
1840	66	1	23	4 3	68/6	15 0 0	1840	42	2	0	6 5	9 11 6		12	5	9
						£130 14 0						£103 2 7		£116	18	3½

II.—Average Price of Wheat and Barley for the Years ending Michaelmas.

Year.	WHEAT.								Year.	BARLEY.							Average Wheat and Barley.		
	A.	R.	P.	Qrs.	Bus.	Value.	Value per Acre. £	s.	d.		A.	R.	P.	Qrs.	Bus.	Value per Acre. £	s.	d.	£	s.	d.
1850	110	3	16	3	4	38/6	6	15	5	1850	96	2	5	7	5	7	0	5	6	17	11
1851	108	0	26	4	3	46/10	10	5	4	1851	66	2	5	6	5	8	8	5½	9	6	11
1852	97	2	9	4	7	54/2	13	4	8	1852	77	1	20	6	4	10	12	2	11	18	5
1853	82	0	9	3	2	80/–	13	0	2	1853	116	2	20	5	2	10	2	7	11	11	4
1854	90	1	2	5	0	73/2	18	6	2	1854	80	2	13	6	5	11	18	0	15	2	1
1855	105	3	33	4	6	75/9	18	0	2	1855	88	3	10	6	6	12	6	10	15	3	11
1856	90	3	12	5	3	66/7	17	18	2	1856	70	0	29	6	3	11	12	10	14	15	6
1857	98	3	10	6	0	48/6	14	11	3	1857	65	2	8	6	3	12	12	9	13	12	0
1858	103	1	19	5	5	52/3	14	14	0	1858	72	3	24	6	3	12	15	4	13	14	8
1859	98	1	3	5	0	54/2	13	11	5	1859	88	3	9	7	0	10	1	7	11	16	6
							£140	6	9							£107	10	11	£123	19	3

III.—Average Yield and Price for the Years ending Michaelmas.

Year.	WHEAT.									Year.	BARLEY.							Average Wheat and Barley.		
	A.	R.	P.		Qrs.	Bus.	*s.*	*d.*	£ *s.* *d.*		A.	R.	P.	Qrs.	Bus.	*s.*	*d.*	£ *s.* *d.*	£	*s.*	*d.*
1871	137	3	16	Slade End & Sotwell. May's Farm.	2	2½	56	7	6 11 4	1871	82	0	33	1	6½	34	4	3 2 5	4	16	10
1872	65	0	0		2	6½	61	2	8 11 4	1872	30	3	8	4	6½	35	8	8 10 11	8	11	2
1873	115	0	30		2	7	55	4	8 1 2	1873	50	3	22	4	5	44	11	10 8 3	9	4	8
1874	176	0	0		4	5	67	3	15 8 10	1874	39	3	0	5	1	49	9	12 15 0	14	1	11
1875	164	3	0		5	2	47	0	12 8 6	1875	36	2	0	5	5	45	3	12 14 9	12	11	7
1876	154	0	0		4	2½	45	10	9 17 4	1876	43	3	0	7	3	38	9	14 3 0	12	0	2
1877	162	3	0		4	1	58	0	11 19 3	1877	70	3	0	4	2	44	10	9 17 9	10	18	6
1878	88	1	37		4	0	58	8	11 14 1	1878	47	1	15	4	2	45	0	9 13 6	10	13	10
1879	193	3	0	Sotwell & Blightwell.	4	4	47	0	10 13 0	1879	117	0	0	5	6½	33	11	9 16 10	10	4	11
1880	158	2	29		3	6	46	9	8 18 6	1880	85	2	0	4	7½	38	1	9 8 4	9	3	5
1881	149	1	18		4	2½	48	7	10 10 6	1881	94	0	1	5	2½	33	4	8 17 5	9	13	11½
1882	141	0	20		4	5	54	6	12 12 5	1882	101	1	13	5	2	31	4	8 3 6	10	7	11½
1883	159	1	1		4	0	45	8	9 1 0	1883	88	0	12	4	5	33	2	7 12 9	8	6	10½
1884	166	3	11		4	3	42	0	9 3 8	1884	106	0	11	5	6½	36	3	10 12 1	9	17	10½
1885	138	2	35		4	2	36	0	7 11 5	1885	45	3	0	7	1	33	7	11 18 3	9	14	10

Mr. A. J. Burrows (Fellow) had great pleasure in proposing a vote of thanks to the author of the Paper, which, looking at the large amount of matter and the mass of figures which it contained, must have cost him a vast amount of labour; but it would be impossible for anyone to speak to it properly without first reading it over and digesting its contents.

He noticed that the author stated as one motive which influenced him in preparing the Paper was the consideration that the Institution did not contain many practical farmers. It contained, he thought, more than Mr. Wells was aware of. He saw friends around him who had devoted considerable portions of their lives to farming avocations. He had himself 32 or 33 years' experience of practical farming, and had seen many of the ups and downs of agriculture, but certainly he had never seen things at a lower ebb than they were at present. But he was still sanguine that prices had touched the bottom, and that they would soon rise again.

He would make but a few remarks, for he felt he ought to have more time to digest the Paper in order to make suggestions of any value upon it. One thing which struck him was some figures in the estimate of the expenses of growing a crop of mangold-wurzel. He had been a grower of mangolds on a large scale for many years, and it occurred to him that the quantity of manure stated in the Paper was quite inadequate. The author reckoned the half-cost of *ten tons* of farmyard-manure at 7*s.* 6*d.* per ton. It was, perhaps, enough to charge for it per ton; but in the district in which he lived that quantity was considered quite insufficient to the growth of a good crop. He had put, this year, from 30 to 35 tons of farmyard-manure, and after that 4 or 5 cwt. per acre of superphosphate; and, notwithstanding the dry summer, and a somewhat late start, he had a produce of over 40 tons of mangolds per acre. He was sure that one

of the best ways of meeting the times was to get this increased production, which was the profit, after all. With a meagre and patchy crop of roots and a foul field, the cost of cleaning was heavy; whereas, with a heavy yield and a clean field, the succeeding crop could be put in without much labour. If a poor crop of roots only were obtained, there were all the preliminary expenses of ploughing, manuring, seeding, drilling, &c., and a very small return. A little extra outlay in manures would often nearly double the crop, and therein consisted the farmer's profit. And it was to that increased production one had to trust for profit, if profit there was.

He noticed the author's figures of 56*s.* per quarter for wheat throughout the calculations. He was also aware that Mr. Wells was willing to discount this according to present prices. Last week he (Mr. Burrows) offered for sale as good wheat as need pass the scale, and which represented a weight of 64 or 65 lbs. per bushel, and the highest price obtainable was 34*s.* per quarter—a very different figure to adopt as a basis for calculations!

He noticed, also, the author's remarks upon couch-grass as one of the farmer's greatest enemies, and which everyone had to contend with, more especially on light soils. He found in his experience that the best way of getting rid of it was deep steam-cultivation and the application of salt. Except in very dry summers, he never knew lime to have much effect upon couch. But salt and good steam-cultivation, in a dry season, thoroughly eradicated it.

Mr. Yeoman asked how much salt Mr. Burrows used.

Mr. Burrows replied that this would depend upon the land. If it were dry, light, or sandy soil, perhaps 10 or 12 cwt. per acre; but if that quantity were applied to heavy clays,

it would probably be found in a wet season that they would become almost unworkable. But salt had a wonderful effect on couch in dry seasons. He found that a thorough steam-cultivation of land in such seasons brought the couch to the surface and left it there to be scorched or withered up; whereas, when the soil was trodden with horses, they frequently pressed in at one turn what they brought up at another; therefore he was a firm believer in deep steam-cultivation, and the application of salt for the eradication of couch-grass.

There were many other points in the Paper requiring careful consideration, if the discussion could be extended to another evening. He might allude to one paragraph where the author spoke of the prices in the year 1838. He well remembered the prices which were realised in the year 1853, the first year he was farming. He sold, that year, a good crop of wheat and a good crop of hops. For the wheat he received 80*s.* per quarter, and for the hops 15 guineas per cwt. That made him at once in love with farming, and he was anxious to take another farm; but at the close of the Crimean war prices fell so rapidly that it put him out of conceit of extended farming. However, he fully believed that even now there was hope for farmers; but he did not entirely concur in the views of the author of a Paper on "The Reform or the Ruin of Agriculture," which had recently been read elsewhere. The author of that Paper seemed to consider that the only hope of the farmer lay in a substantial and permanent reduction of rent. No doubt present prices of produce proved that a good deal of land in England was too highly rented; but it was not so considered eight or ten years ago, though recent prices and adverse seasons had shown that many farms would not long maintain the rents now paid for them. He thought, if relief was to be obtained only by the continued reduction of rents, we

must at the same time consider the prospects of the industries of the country generally. Where a landlord was receiving a very low rent, he could find very little money to expend in the locality; and probably the tenant was selling his produce at a low figure, employing very little labour, and the labourers were in receipt of low wages, so that it reacted to a certain extent upon almost every industry in the country. He knew from his own district, where they had just gone through the excitement of the elections, that the agricultural labourers had become convinced that extreme low prices of produce were not entirely to their advantage, and were beginning to think over these things more seriously than at any former period.

He hoped it might not be found necessary to go on reducing rents; but it had been his privilege, or rather his duty, in some instances, to have to make very considerable reductions. He could mention cases in which the present rent was now not more than two-thirds, or even one-half, what it was six years ago. The old tenants had been liberally met and retained, because they were good tenants. He had always seen the advantage, as well as the necessity, of timely and fair concessions to old tenants, rather than large reductions to new ones. He thought and maintained that, if any man benefited by a change in the rental of a farm, it should be the old tenant who had lost a good deal of capital on his farm.

It was perfectly impossible, as had been stated in the Paper, to successfully compete with the Indian market. The Indian cultivator subsisted on a little rice, and his wardrobe was scanty—perhaps only a piece of calico. But English labourers expected and deserved to be well fed and well clothed. In Russia the serf who cultivated the wheat-land subsisted on rye-bread, and had, comparatively, very few

comforts. Therefore, as far as the price of production was concerned, it was impossible to compete with those countries. But he thought one relief might be obtained by taking some of the burdens off land. Land was found, many years ago, a very convenient peg to hang nearly all rates and taxes upon; and, unfortunately, these burdens hung there still. They were put on at a time when protective duties prevailed, and there they were now; and, from his own experience, he knew land to be saddled to such an extent that the landlord's income was very small indeed when he derived it solely from the land. He knew some instances where land was not paying more than 1½ per cent. on the purchase-money, and he would ask how landlords could, in such cases, reduce rents much lower?

In many instances there were charges on the land, such as younger children's portions, all of which had still to be paid in full. The owners in such cases were reduced to the greatest straits, and, as a result, the mansion was often shut up and trade in the district stagnant. If, in consequence of extreme low prices of produce, rents were to continue to go down a great deal of land would eventually be thrown out of cultivation. Landlords would not be able to let even at reduced rents, and tenants would not be found to treat for farms. He thought one main thing to be aimed at was increased production, and another, a closer supervision of labour. In some districts he frequently saw, in carting and other farm operations, two or three horses employed in work which one horse could do easily. This waste of labour was very observable in ploughing.

He had for many years kept accounts of the cost of the operations on farms. He could plough land by steam-machinery at from 7*s.* to 8*s.* per acre; and during the last

harvest he had the satisfaction of cutting most of the white straw crops on the arable portions of farms comprising about 1,200 acres, with Howard's string-binder. He could hardly state, off-hand, what the cost amounted to per acre, but he sometimes cut between 10 and 11 acres per day with one machine. It was not in every case necessary to stook the sheaves, but the waggons sometimes followed and picked them up and carried them at once to the stack-yards. He considered that by more task-work farmers would considerably reduce the cost of agricultural operations. Last harvest the cost for carrying and stacking corn was 3*s.* 6*d.* per acre, with horses found, and, in one instance, 4*s.* 6*d.* for a very heavy crop.

These were points which, as well as reduction of rents, deserved consideration, and, if well studied and acted upon, they would do much towards enabling the farmer to meet the times. It was not a reduction of rents alone, but greater economy of labour and closer supervision throughout.

Mr. G. J. Brown (Fellow) seconded the vote of thanks. He felt, with Mr. Burrows, that it was quite impossible to properly follow, without more consideration, the great array of figures which had been so carefully and well put together.

He was afraid he was hardly a practical farmer to the extent of the author of the Paper and the last speaker. Although with earlier experience in farming, he was now one of those unfortunate persons who were working in London as land-agents, and he had been brought face to face with the difficulty of having to work land put into his hands, being a farmer, to a great extent, against his will. One line of thought he had hoped would have been touched on more by the author, and it was an object very much before every-

one, situated as he was, with a limited amount of capital to work tracts of land thrown on their hands, and that was, as to the best mode of working it and reducing the cost of cultivation. Mr. Burrows had spoken of the string-binding reapers and the adoption of machinery generally for reducing the cost of labour. Not only by machinery, but by every mode of farming, he supposed, they hoped to reduce the cost. Both gentlemen who had spoken seemed to be farming good, deep, valley land. There was a great deal of land in hand in his part of the country situated on the hills of Wiltshire and Hampshire, and what to do there to "make both ends meet" puzzled him beyond description; and he had hoped, when he heard that a Paper was to be read on the cost of production of crops, that some hints would be thrown out on the producing-cost in those unfavoured counties.

He had been rather struck by the author's remarks respecting couch-grass being developed on lands laid down to clover "ley" for any length of time, but one means by which they hoped to lighten the burden in Wiltshire and Hampshire was by allowing "leys" to lie over in old field for a year or two, which would be found to lessen the cost of labour, at any rate; and they hoped, when they broke up the land, in a lucky season, to bring it into cultivation without any great outlay.

Referring to the cultivation of a swede-crop, he understood the author to say that the land was only once ploughed; but was it not generally found that ploughing more than once was required to produce a good crop of roots?—at least, that was his own experience of the matter. He had probably failed to catch Mr. Wells' meaning, but perhaps he would give some information on this point in his reply.

Mr. J. Martin (Fellow) quite agreed with the mover

and seconder of the vote of thanks to Mr. Wells, that the Paper contained so many figures, that it could not be adequately discussed on the present occasion. Therefore he begged to move the adjournment of the discussion till the next Meeting.

The vote of thanks and the motion for adjournment having been put to the Meeting and carried unanimously, the further discussion was adjourned to the 11th January, the discussion on Mr. Smyth's Paper, originally fixed for that Meeting, being postponed until a later date.

No. 228.

AT

THE ORDINARY GENERAL MEETING,

Held on Monday, January 11th, 1886.

THE PRESIDENT (MR. E. I'ANSON) IN THE CHAIR.

The discussion on Mr. A. D. Wells's Paper, entitled "The Cost of Production and the Value received for our various Farm-Crops," read at the last Meeting, was resumed by

Mr. J. Martin (Fellow), who said that Mr. Wells gave as his reason for reading the Paper now under discussion, that he was an "unadulterated farmer," and had arrived at the conclusion that he was the only Member of the Institution who could be so described. How far this might be the case he (Mr. Martin) could not say; but this much he well knew, that there was a very large number of practical farmers amongst the Members. He himself claimed to be one, and the remarks he was about to make would be solely from a farmer's point of view.

He would have to take exception in several instances to the rules Mr. Wells had definitely laid down for estimating the cost of production of farm-crops. In the first place, he put the value of farmyard-manure at 7*s.* 6*d.* per ton, and estimated that 1 ton of straw would make 3 tons of manure. But London stable-manure could be delivered at stations a few miles from London at 4*s.* to 6*s.* per ton; and, considering the relative qualities of this manure and that made from straw and roots only, he thought that 4*s.* per ton was the maximum

value of farmyard-manure. And it was preposterous to suppose that 1 ton of straw would make 3 tons of manure. He noticed, too, that in Mr. WELLS's schedules, at pages 106 to 109, he estimated to produce 5½ tons of straw and to use 20 tons of farmyard-manure per acre in eight years; therefore, if the straw and manure stood in the ratio of 1 and 3, as he assumed they did, he would still be using 3½ tons more of farmyard-manure than he could produce from the straw grown on the land.

With regard to using superphosphate for growing turnips, his experience had been just the opposite to Mr. WELLS's, and, speaking generally, tallied with the results obtained from the field experiments at Rusper, in 1882, as reported in the R.A.S. Journal, vol. 20, p. 113. In the counties where he farmed, namely, Lincoln, Cambridge, Suffolk, and Oxford, it could always be seen to an inch where the artificial manure had been used; and he was certain that, if Mr. WELLS would continue to use superphosphate, he would double the weight of his turnip-crop.

Then, as to the manurial value of roots eaten on turnip-land. He gathered from his own experience that, if the land be farmed as economically as is consistent with the production of full crops, the difference between carting the roots off and eating them on was generally an increase of 2 qrs. per acre in the succeeding corn-crop, provided the land were ploughed as early as it would be if the roots were carted off.

He quite agreed with Mr. WELLS, that "the farmer may "farm the best land, manure his soil in the best manner, "and plant good seed, but, unless his cultivations are "equally good, he fails to reap a good harvest." But he and the author seemed to differ in their opinions as to what constituted good cultivations. It was beyond question that, to ensure a full crop of turnips, the land should be thoroughly

well cleaned and worked, and the necessary cultivations for this crop cost, in all the counties in which he farmed, about 50*s.* per acre. Mr. Wells, in his schedule, allowed no more than 22*s.* for the work; and this, no doubt, was one of the reasons why so much was charged every year for twitch-digging, and why land paying a rent of 55*s.* per acre, including tithe and rates, was estimated to grow no more than 10 tons of swedes per acre and 1¼ tons of straw.

He was also of a different opinion from Mr. Wells as to the value of a clover-crop. His experience taught him that although seeds do, under some conditions, favour the growth of twitch, they not only rest the land, but corn grown on seed-land or clover-leys was considered to be the cleanest and best for seed.

The best, cheapest, and most effectual way of cleaning a foul farm was undoubtedly by bare fallow, where it was strong clay-land that had to be dealt with, but with ordinary turnip-land a green crop was best and most economical. It was of great importance that the land should be covered over, and for this reason turnips, vetches, and other green crops were usually grown in preference to a bare fallow.

Strong objection was made by Mr. Wells to clover, on the ground that it favoured the growth of twitch; but on turning to his schedules he noticed that without a clover-crop he charged 5*s.* per acre every year for twitch-digging. What, then, would this work cost with a clover-crop introduced?

He did not agree that docks and thistles were better dealt with by a ploughshare than by a cultivator, but he did follow Mr. Wells when he said they were better lifted by hand once a year. And here again the question arose, Why should there be so many docks to lift if no clover-crop be grown?

He next came to the estimate that "the yearly amount

'of manual labour on an arable farm would be probably "about equal to 55*s.* per acre." If this had been Mr. WELLS's experience, all he could say was that he did not wonder that he did not make farming pay, and that he should look to the importation of Chinese labour to restore prosperity to agriculture. If any of his bailiffs brought him such a bill for labour, he would certainly replace him with a more capable man.

The custom of threshing corn with a flail was very old, but it was now almost entirely superseded by the use of the steam-thresher, and, although it was quite true that barley threshed with a flail was better for malting, he could not think that our northern farmers would have discarded one implement for the other without ample justification. Mr. WELLS said that in his own district hundreds of men were employed throughout the winter in threshing barley with the old-fashioned flail, but he found that on turnip-farms in his own district there was always plenty of work without this for labourers all the year round.

As to the cost of hoeing turnips. He never saw this work better done than it was in Lincolnshire and Norfolk, where they could have the crop cross-hoed at 4*s.* to 4*s.* 6*d.* per acre, and a second hoeing, to clean it, at 2*s.* 6*d.* per acre, making, at the outside, 7*s.*, whereas Mr. WELLS charged 10*s.* per acre.

One shilling per pound for mangold and turnip seed was an extravagant price, and several of the other items in the schedules might be advantageously cut down.

With regard to the second part of the Paper—"The value received for our corn-crops,"—he quite agreed with Mr. WELLS that this was a very painful subject, and he was sorry that he was not able to point out how and when relief might be expected.

He now came to the schedules of cost, and the Members

had already learned, from the remarks he had made, that, in his opinion, good farming, and profitable farming, if there be such a thing, demanded that these figures should be materially altered. He would, however, again point out that it was out of all character with good farming that 8*s.* per acre should be spent in twitch-digging, dock-lifting, and thistle-spudding on the wheat and barley land after root-crops, and 5*s.* per acre every year for twitch-digging alone.

He would put the total cost of the swedes at £7; and, as, in his opinion, land which was worth 55*s.* per acre, including tithes and rates, should produce 20 instead of 10 tons of swedes per acre, the value of the crop and manure would be raised, according to Mr. Wells's scale, to £7 16*s.* 8*d.*

The bean-crop showed a loss of 3*s.* 9*d.* per acre; but seeds, in place of this, to either mow or graze, would give a better result, and put the land in a more desirable form for the following crop: and if vetches followed by rape be a loss of 44*s.* per acre, the sooner some other crop was substituted the better.

What he had said with regard to the turnip-crop applied also to the mangolds. He would put the cost at £10 per acre, and the crop at 30 tons per acre. He was quite satisfied that, if a farm would not with proper management produce more than was named in the schedules, it was never worth 55*s.* per acre for rent, tithe, and rates.

No mention was made in the schedules of cake used by stock or profit derived from stock, except sheep on turnips; and although this branch of a farmer's business was not paying so well now as it had been, it was much too important to be lost sight of.

His advice to Mr. Wells was to try to get a little profit out of stock by cake-feeding; a greater produce off his land

by better and cleaner cultivation and artificial manure, and a considerable reduction in the cost of his labour by closer attention to the weekly labour-sheet.

Mr. E. P. Squarey (Vice-President) cordially welcomed a Paper on this subject from a farmer, as likely to bring fresh views to bear upon points which Surveyors and land-agents were perhaps accustomed to deal with on lines of professional routine, and the Paper was all the more welcome from the fact that the author had enunciated sound economical views with reference to freedom of contract in fixing rent and in dealing with the relations between landlord and tenant.

He was also glad to hear Mr. Wells's remarks as to the question of tithe. Surely tithe was rent in another form. The landowner bought or inherited his estate subject to the payment of tithes; and because prices happened at the present moment to be adverse to the landowner, was it to be contended that the policy under which tithes were dealt with in 1836 should be abandoned? Assume the converse of the proposition. Where land was applied to building purposes, would a claim on the part of the tithe-owner to participate in the improved capital-value of the land be listened to? Similarly, it was quite unfair to the tithe-owner that the question of the settlement of tithes should be reopened on account of lower prices due to temporary depression in value. Moreover, if present prices were to continue, it was obvious that the tithe-owner would participate in the loss, seeing that £100 of tithe rent-charge, as fixed when the Tithe Act was passed, would, at the present prices of wheat, barley, and oats, fall to £75—thus placing on the tithe-owner some considerable proportion of the reduced prices.

The author had expressed himself very ably and clearly as to the conditions governing rent, but there was one element omitted from his enumeration of facts—the item

of sentiment. In the palmier days of farming, from 1855 to 1876 or 1877, he and his partner, Mr. Rawlence, were accustomed to consider that the question of sentiment added something like 5 per cent. to the value of a farm—*i.e.*, that the tenant on the farm would rather pay an advance of 5 per cent. on his rent, if it were forced on him, than leave the place where, perhaps, he and his ancestors had lived for many years. But the consideration had two sides to it, for this sentiment had equal weight with the landlords, frequently inducing them, out of attachment to old tenants, to make large abatements, and to put up with heavy arrears of rent—a fact to which many of those he was addressing could bear witness.

He had listened with interest, and with the respect they deserved, to Mr. Martin's able criticisms, but, having the management of property which nearly flanked Mr. Wells's land, he was prepared to hold Mr. Wells and his neighbours up as model cultivators—in fact, in the neighbourhood of Wallingford there might be seen a few years ago farming as good, clean, and liberal as any county in England could show.

He was interested in Mr. Martin's assertion that superphosphates were bound to tell on any land, but he had some experience which led him to agree, to some extent, with Mr. Wells, that where land of a certain type was in extremely high and liberal cultivation superphosphates did not produce the results which might be predicted of them on other lands. He would like to know on which of Mr. Wells's farms it was that superphosphate failed to produce the results expected. Was it on the chloritic marls, or on gault, or alluvial land, in the valley of the Thames, or on the chalk-hills?

Mr. Wells (interposing) said it was on the very heavy chalk-hills—the chloritic marl.

Mr. Squarey (continuing) said it was on these very marls that superphosphates (if the land were in a high condition, and there were a sufficient quantity of superphosphatic matter present from other causes) would perhaps fail. He had an idea that these chloritic marls contained, in many instances, a large quantity of phosphates.

With reference to farmyard-manure, he was inclined to agree with Mr. Martin, that 7*s.* 6*d.* a ton was too large a sum when dealing with the farm as a whole. Though Mr. Wells was correct in saying that London dung could be delivered by rail at about that price, there was the carting home to be considered, and, no doubt, the effect was much greater than that obtained by farmyard-manure made without the application of oil-cake. He thought Mr. Wells's estimate of 7*s.* 6*d.* a ton for farmyard-manure in excess of the true value.

He entirely agreed with Mr. Martin in his criticism that a crop of 10 tons per acre of swedes, or 20 tons per acre of mangold-wurzel, was an inadequate result of such management as that described by Mr. Wells. Indeed, in passing through the district of Wallingford, swedes certainly averaging 16 or 20 tons an acre, and mangold averaging something like 30 tons per acre might be seen, instead of 20 tons an acre, the figure given by Mr. Wells.

With reference to Mr. Wells's calculations that the manurial value of swedes and turnips, when carted off or fed on the land, was to be measured by a difference per acre of a quarter of barley only in the succeeding crop, he would say that this low estimate was not borne out by his experience. He was disposed rather to concur with Mr. Martin in thinking that it would be nearer two quarters per acre. If followed by a crop of clover (the omission of which, in Mr. Wells's rotation, struck him as somewhat singular), he could not but believe that a large residuum of manurial value would come

to the aid of that clover-crop, and while he concurred generally with the impolicy of sowing Italian and ordinary varieties of rye-grass with clover (for couch too frequently took the place of those grasses), yet it seemed to him that Red hop and Dutch clover together might be grown without necessarily having couch following them. These, moreover, were restorative crops, which involved less cost in the shape of seed than any other and a small amount of labour, whilst producing on such land as Mr. Wells mentioned crops also which were valuable at once for sale in the market or for profitable consumption by sheep and cattle on the land.

It had been stated by Mr. Wells that "ten tons of "swedes will feed 200 sheep for one week at 3*d.* a head, or "ten tons of roots will make ten stone of mutton at 5*s.* 4*d.* "per stone." This was on the assumption that sheep consumed 14½ lbs. of swedes per head per day, but no allowance was made for hay in addition to roots. But surely if these figures were adopted they might also adopt the value of vetches, which were consumed on the same footing, and rape, which followed after vetches; and the cost of keeping sheep (if the estimate which he made hastily were right) would be only about 18*s.* a head per acre, exclusive of wool. Supposing them to have no artificial food at all, it was clear that even in depressed times 18*s.* per head for the whole year's management of sheep would not be a large amount.

Mr. Wells's conclusions at pages 110 and 111 were sufficiently disheartening. He would have estimated that the crops of wheat and barley stated to be grown from 1831 down to 1840, and from 1850 down to 1859, would have given a larger average than those actually disclosed in the schedule, but the accounts seemed to be so admirably kept that he could only hazard the conclusion that the quality was

the best white wheats, which did not yield so largely as some of the red wheats. With regard to the prices given in the table, though many of them were, he believed, above the average of the ordinary English market, he knew the country to which they applied, and that the wheat grown there was extremely good. It was almost within the area where the maximum amount of sunshine in England obtained.

On reading the Paper many must have come to the conclusion that the old formula of "chemistry for light land, and mechanics for heavy land," had been ridden a little too hard. He was afraid there was a tendency to trust too much to chemistry, and nature, which never made a mistake, had shown us our errors and warned us that there were conditions under which chemistry could not be relied on so implicitly in the ever-varying condition of the field as in the laboratory.

As to the application of mechanics on heavy lands, the greatest strides made in the last few years had been in the development of mechanics in the cultivation of land; but while admitting that the greatest strides had been made in this direction, there was no part of practical farming which, he thought, needed more careful watching and administration than steam-cultivation. He could give instances of farms nearly adjoining Mr. Wells's, where, under the hands of an experienced and liberal manager, the yield of wheat during the last few years had not been what was expected, and less than that of neighbouring land, simply because the preceding tenant had put down the steam-plough about 10 to 12 inches instead of 7 to 9 inches in depth into these chloritic marls. He, therefore, warned those about to adopt the steam-plough to use it, like every other great power of the kind, with extreme care and discretion.

He thought the expenditure for labour, as analysed by Mr. Martin, was in excess of the usual outlay. Although

Mr. Wells used only one ploughing, and an outlay in addition of 5*s.* an acre for forking quitch, he was so far successful that there was no quitch there; and if it could be achieved at that price by Mr. Wells, it could, no doubt, be done at the same price by others also.

Professor W. Fream (Associate) said there were one or two points on which he would venture to make a few remarks. At page 92 he observed a reference to experiments with superphosphates, and, though Mr. Squarey had rather cut the ground from under his feet, he might remark that it must be taken as a general principle, that when it was required to test the capacity of land, with reference to manurial treatment, the soil should first be brought into as low a condition as practicable, since unless that were done it would be almost impossible to get results which would be of value for comparison. He knew of experiments at present going on where the land had previously been made to carry two white crops. These exhausted the soil to a great extent, and so reduced it to a low condition. It was an old saying that condition was the property of the tenant and fertility the property of the landlord, and as the tenant could do to a certain extent what he liked with his own he should reduce the soil to a low condition before making experiments with manures, for unless that were done—and he saw Mr. Wells did not tell them the previous history of the field—he was afraid that results valuable for comparison could not be arrived at.

On page 93 there was a reference to another subject which was wholesomely agitating the public mind,—the great waste perpetrated in this country by throwing away sewage material. The solution of this difficulty was being steadily worked out. During the last few years some of the Members of the Society of Chemical Industry had

been doing important work in this connection, and there had been laid before that Society several Papers bearing on the subject to which Mr. Wells had alluded. Of course, for universal interest and practical value there was, perhaps, no subject which could better occupy the attention of land-agents, and of agriculturists generally, and he was glad to say, from his knowledge of experiments which had been in operation (though the exact results could not yet be stated), that very considerable progress was being made. He hoped the result would be the discovery of a method by which sewage could be satisfactorily dealt with all over the country.

On page 95 reference was made to couch-grass. This so-called pest was in itself by no means an innutritious crop on arable land. It grew in abundance in many parts of the temperate zones. On the prairies of North-West Canada couch-grass was a prolific native, and he was assured there that it was regarded as a most valuable feeding-grass. When the relationship of couch-grass was borne in mind, as a first cousin of the wheat-plant, it must be acknowledged that it carried with it high credentials. In Italy the underground portions were raked together, washed, and sold as food for horses. It contained a large quantity of saccharine matter, which was valuable on account of its heat-giving properties. Consequently, couch-grass should not be blamed as couch-grass, seeing that it possessed this nutritive value. The great difficulty presented by it arose from its property of sending its underground stem to permeate the soil in all directions. This structure was called the root in the Paper; but he might, perhaps, be allowed to say, that it was not a root but a true underground stem, and it was on this account that it was so terribly difficult to get rid of. Mr. Wells had said that portions only an inch long would germinate, and become new centres of growth. That was true; but the length of

any portion that might be left in the ground did not determine whether that portion would germinate. Sometimes a piece 2 feet in length would not germinate, while a little bit a fraction of an inch long would. The distinctive property of a stem was the development of buds, and the structure in question being a stem, if a small portion were broken by an implement of cultivation, so long as there was a bud on that portion, it was capable of germination. Similarly with a potatoe-sett, or a cutting from a geranium-tree or a fuchsia, the gardener had to see that the severed structure bore a bud, as if it did it would germinate.

He presumed it was called *couch*-grass on account of its habit of forming a couch, or bed, beneath the surface of the soil. The greatest difficulty arose with it when it was desired to convert old ley into arable land again, couch-grass being a pest from mechanical rather than from any other reasons. Nutritively it was good; mechanically it was one of the worst pests.

He presumed that one object the author had in view was to present, to the younger Members at any rate, some typical examples of working expenses. He had looked to see the precise localities to which the figures applied, for nothing varied more than agricultural prices in different districts, and he thought it would be useful if Mr. Wells were, in replying on the Paper, to specify, as clearly as possible, the districts where the work was done on which he based his figures. The cost of manual labour bore a ratio to the distance from centres of population—as a rule, the nearer to large towns the higher the price would be, and the further away, the cheaper. He regarded these figures as a useful contribution to the history of agricultural prices; but in connection with figures of this character, it seemed desirable to have precise information as to the locality, as well as all necessary data on which the figures were based.

Mr. G. C. Phillips (Professional Associate) said it was not his purpose to criticise Mr. Wells's Paper, but to offer a few remarks on what he felt to be two very important points with regard to the future farming of this country. The first as to the necessity of the aeration of land, and the second, the important functions fulfilled by root-crops and grass in preparing for cereals.

As to the aeration of the soil, it was, he thought, admitted that spade-husbandry was the best way of obtaining aeration, but its cost, through manual labour, precluded the possibility of using it. It would be seen from a Paper which he had handed to The President that the experience gained during seven years in the use of steam applied to the spade showed that the difficulty as regarded the expense of manual labour had been eliminated, and that all the benefit of spade-husbandry could be now obtained on an ordinary farm at one-seventh the cost of manual labour. The importance of this fact could not be overestimated. Steam had never yet been applied to the foundation of farming. It had been used as an auxiliary, and been brought, as it were, to bear on the branches of the tree rather than on the roots. The experience that had been gained during seven years of using it, during which it had been relied upon as the foundation of every act of husbandry, was so startling, that he was afraid his veracity would be doubted if he stated the results. One of the first results he would give was that of an eight years' rotation. The cost of the foundational acts of husbandry showed an average by the use of steam, in combination with the plough, of 18*s.* 9*d.* per annum per acre. The rotation of the eight years' crop was as follows:—First year, clover; second year, wheat; third year, swedes; fourth year, barley; fifth year, beans; sixth year, wheat; seventh year, roots, and eighth year, wheat again; and, as he had said, 18*s.* 9*d.* per acre per annum was the cost of the acts of cultivation

which lay, so to speak, at the foundation of the farming of the land. The quantity of manure, moreover, was considerably reduced, and it was shown in the column headed "Manure" that £1 15*s.* per annum per acre would cover the cost of manure in combination with spade-husbandry. The statement referred to showed a profit of £3 5*s.* per acre per annum as the average derived by adopting that course of rotation.

As to the second part—the important functions fulfilled by alternation of certain crops—it was a known fact that in the composition of the atmosphere four-fifths of its bulk consisted of nitrogen gas, and nitrogen gas was the great source of the nitrates which were so much valued in artificial manures. Now, it was the function of roots, mangold, and swedes, as well as beans and clover during their growth, to absorb a large quantity of this nitrogen gas and assimilate it, and the surplus was excreted into the soil. There was an actual excretion from the root into the soil, and agricultural chemists had asserted it as a fact. He was not offering his mere *ipse dixit* for it, but he understood that it was the case, and it certainly confirmed the theory formed as to the important function of root-crops as alternated with cereals. The consequence was that the root-crops were stimulated by the natural manure thus applied, and the same was the case with beans and clover, for they absorbed the large quantities of nitrogen stored up in the atmosphere, and, by carrying it down into the soil, became the practical chemists that prevented the necessity of spending so large a sum on artificial and other manures. The consequence was that the following cereal crops were considerably increased in bulk, and so much so that the results of the tabulated statement of rotation had been closely approximated to. He did not say that they had been actually realised because the farms dealt with had not been under that course of rotation during the whole period, but they were

being gradually brought into it, and he had not the slightest doubt that, when brought into a perfect state of cultivation on this system, the results given would prove to be rather understated than otherwise; and if this were the case, he submitted that there was a ray of hope yet for British farming.

Mr. A. Tapp (Professional Associate), referring to the allusion to Dr. Voelcker in the Paper, observed that he knew of a landlord in the Midland Counties farming some 2,000 acres of his own land whose experience corresponded with that described by Mr. Wells. In this case Dr. Voelcker assured the owner referred to that he would grow better crops of turnips with mineral superphosphate. He took his advice, and, while the crop was growing, promised the neighbouring farmers that he would teach them how to grow turnips. But, when the autumn came, this gentleman peeped over his fences and saw that his neighbours had grown turnips better by far than his, with the aid of farmyard-manure made under covered roofs with half-and-half linseed and decorticated cotton-cake. Some of the finest crops he (Mr. Tapp) had ever seen were grown last year on light soils by the aid of 20 tons of farmyard-manure and two cwt. of nitrate of soda. Probably a field of 24 acres which he saw, would keep 320 hogs (sheep) and about 70 bullocks in turnips from the 1st of October to the 1st of February, when, with the aid of cake-feeding, they would be fat for the butcher.

The author of the Paper had put the value of farmyard-manure at 7*s.* 6*d.*, because that was the price at which London stable-manure could be delivered 50 miles by rail. He also said that London manure was not so good as farmyard-manure. He (Mr. Tapp) would not like to accept that statement absolutely, for farmyard-manure, made as it

should be with the aid of cake, was worth 10*s.* a ton, and it was a generally-admitted fact that manure was more valuable made from cake than from corn.

The root-crop had also been credited with the value of the manure left by the sheep. It should be remembered that the value of the turnip-crop was not to the mutton and wool produced alone, but to the beef and to the barley and seed crops as well. Every good farmer nowadays fed beef, and should produce enough turnips on every acre to feed one bullock in the yard and six sheep on the land, by taking every alternate row of roots instead of a greater number of rows to the cattle-sheds, and so bringing about a more even spreading of the sheep-manure. The accounts of the root-crop had been credited with 10 tons of roots only. Surely 20 was a more average figure in the present day, when it was the custom to cast the farmyard-manure on to the land for turnip-crop rather than for the wheat-crop, following the idea of the old adage, "whipping the horse that will draw."

He was surprised that no reference had been made in the Paper to the value of the American digger in getting rid of twitch. In places where the most advanced ideas in agriculture were adopted, it had become the custom to use the American digger, and its effect, especially on light lands, had surprised even the oldest and most successful farmers. He could direct any of the Members present to some farms where the couch and other weeds had been entirely eradicated, and where the root-crop which was prepared last year by that digger was perfectly free from couch. One of the farmers said to him that he had been doing battle with couch-grass for 40 years, and could not, without seeing it, have believed the effect wrought by this implement.

It had been proved that this implement on a farm of 800 acres had saved £100 in man and horse labour, and yielded

to the succeeding crops manure from rotten couch and weeds, that were formerly burnt, worth £1 per acre. This seemed to answer, in another way, Mr. Wells's question, "How, then, can this pest be got rid of?"

The digging of couch was an expensive process, and had been found to altogether fail on some lands. Caustic lime would doubtless kill the black twitch, but not the long twitch. Mr. Wells had advised farmers to plant as small an acreage of clover as possible. He (Mr. Tapp) would say, "Plant as much as possible, say one-fifth or one-sixth of your acreage, and save your labour-bill," which was always a very large item.

The plough, it had been said, was the farmer's best instrument. He would add, as a corollary, that when the American digger had been added to the implements of the farm, it would take the place of the plough as the farmer's best instrument.

The author suggested that cutting crops by hand was cheaper than machine-cutting, and that flailing out corn was cheaper than steam-threshing. Surely this was advising retrogressive steps in farming. The present machine would cut, on an average, 12 acres per day in very heavy crop:—Three horses at 5*s.*, man at 5*s.*, boy at 1*s.*, oil, &c., say 24*s.*, or probably 2*s.* per acre, add tying and stacking, 5*s.*=altogether 7*s.*, against Mr. Wells's 14*s.* per acre, for harvesting wheat.

He did not advise the use of self-binding reapers here, for he had seen Hornsby's and McCormick's self-binders at work in England, and they could not work in our heavy laid and twisted crops; but in many parts of America where business had taken him, he had seen them work admirably in the light dry standing crops of that country. Mr. Wells suggested that the men should be employed in the winter to flail out the corn, but he asked whether during that season they were not fully employed in getting in turnips

and feeding the beasts and the sheep. It seemed strange to talk about threshing by hand nowadays.

The prices both for singling and dressing swedes were put too high. Mr. Wells put the former item at 10*s.*, and dressing at 10*s.* He had seen 6*s.* per acre paid largely for hoeing and singling swedes, and swedes pulled and dressed at 7*s.* per acre in fields that came out 20 to 25 tons to the acre. Swede-seed was charged 4*s.* per acre. Surely 3 lbs. at 9*d.*, viz., 2*s.* 3*d.*, was the more usual price.

The swede-crop put at 10 tons an acre seemed too small for an average: surely 18 to 25 tons was more often seen. Many farmers now considered the root-crop the best paying crop that could be grown.

The author had concluded by advising a radical change in the course of cropping, viz., to follow seeds with roots, instead of wheat; but if he would have an American digger, he would find it better to stick by the older system of husbandry.

Mr. J. A. Eggar (Fellow) said that this was a subject in which he took great interest. He was himself a farmer, and therefore the remarks he proposed to make would represent his own practical experience. It should be borne in mind that what applied to one farm did not necessarily apply to another. He gathered, from reading Mr. Wells's Paper, that he had been farming on thoroughly good land, and his impression was confirmed when he learned, as he had just done, that the author came from the neighbourhood of Wallingford, a district which comprised some of the best farming-land in England. He happened to be at Watlington, near Wallingford, a few years ago, and passed by Mr. Newton's farm, which was, certainly, one of the finest in the country. But remarks which applied to such land would certainly not apply to many of the hill farms of Hampshire.

He thoroughly agreed with Mr. Wells that superphosphates on highly-farmed lands did not show the same results as on farms not in a high state of cultivation. The aid of superphosphates was not required on land that was kept in a high state of cultivation, and which had been manured with properly-made farmyard-manure. With regard to Mr. Wells's price for farmyard-manure, no fixed value could be put upon such manure. The manure on one farm might be worth ten times what it was worth on another. If it were merely rotten straw, it was almost valueless as a manure; but if it were properly cake-fatted manure, it would certainly be worth fully 7*s*. a load. On the hop-lands in his district it was stipulated in many leases that as much as £7 per acre in rotten manure should be expended every year; and the price he had stated was what the manure was valued at in his district if properly made.

It had been stated by Mr. Phillips that steam-cultivation was the basis of all good farming. He thought that the remark ought to be taken with great caution, because his experience had been that steam-cultivation, unless judiciously used, was injurious. It was a very great help to a farmer when he was behindhand with his work; but he would strongly advise the younger Members of the Institution, if they thought of going into farming, to be very careful how they used a steam-cultivator. He did not approve of steam-ploughing, nor of steam-cultivation except under special circumstances; he had seen very injurious effects from it—in fact, in chalk-districts which he knew of, where it had been resorted to, the land was so foul now that it would cost fully £5 or £6 an acre to get it back into a proper state, and he believed it was greatly owing to the injurious use of steam-cultivation, because, unless it was followed up with drags and harrows to clean the land thoroughly, the money spent on it was expended in vain.

There was no doubt that couch was one of the greatest pests that a farmer on an arable farm had to contend with, and the cheapest way to eradicate it, was certainly well worth knowing. If the weather were not propitious it would be a very costly affair, but with very hot and dry summers like those of the last two years, the couch might be got under at a very small cost. This year and last year also he happened to take some land, adjoining his own, which was in a foul state with couch—some of the fields particularly so,—and one field which he wanted to sow with swedes was very bad indeed. The weather was, certainly, favourable, and he got the couch on the surface and occasionally harrowed it, the consequence being that it got so dried that he was able to plough it under, where forming a manure, and leaving the field comparatively clean, it only cost him this year 1*s.* an acre to lift it with the prong,—but this was, as he had said, under comparatively favourable circumstances, the weather being propitious for the purpose. With a clean farm he agreed with Mr. Wells that there was no cheaper way of keeping couch under than by letting the fields be looked over and digging up the couch; but it was not cheaply done unless a man could look over an acre a day.

He would make a few remarks with regard to the sheaf-binder. The gentleman who preceded him did not advise its employment. Last year he had one of Wood's binders, and this year he had two. He had never seen one at work before using his own, therefore it was rather a venture; but the first year he cut 130 acres with it. It did its work marvellously well, and he was so well satisfied that he had another this year and cut the whole of his corn—240 acres—with the two binders, at a cost per acre of 2*s.* 6*d.* for string. He timed the binders in one field especially, where there were 10 sacks and 2 bushels of corn per acre, and they

cut it in 10 hours. If that could be done it must be an advantage to use sheaf-binders. He could not have got the corn so cut except by machinery—it was impossible to do it —and it was far better than having it all strewed about as it was with the reaper. He had never seen such clean and beautiful work as was done by these binders, and he would defy anyone to put the horse-rake over the field he referred to and find enough to fill the bed of a cart.

One other point he might refer to in connection with Mr. Wells's Paper. What, he would ask, would the farmers have done in the large sheep-farms in Hampshire and hilly counties, during the present times, if they had not had saintfoin leys to fold their sheep upon? Saintfoin was one of the greatest helps to the hill-farmer, and made him, to a great extent, independent of drought. If his turnip-crop failed, as it had done this season, what had he for his sheep unless he had saintfoin to fall back on? If the sheep were put into saintfoin, it would correct irregularities in feeding, such as eating green crops when the frost had been on them; and it was one of the safest things to feed, whether it were regarded as hay or as green fodder.

Mr. J. W. Kemsley (Fellow) said that Mr. Wells was mistaken in supposing he was the only farmer in the Institution, as there were a good many other Members who claimed to know something about farming. Mr. Wells's Paper, when analysed, came to this—that land used to let at 40*s.*, an acre with a tithe of 10*s.* and rates at 5*s.*, making 55*s.*, when wheat sold at 56*s.*; but now that wheat was selling at 32*s.*, land ought to let at 17*s.* 6*d.* an acre. He thought, however, it would be a more profitable employment for the Members of the Institution to turn the figures round and say, "Wheat sells at 32*s.* a quarter; can it be produced at that

price?" He ventured to say emphatically, No—not on Mr. Wells's eight-course system on the ordinary land of England. If it could not be produced at that price on that system, what could we substitute? On reading the Paper one could not help feeling that Mr. Wells had not looked over his own fences enough, but had confined himself to his own locality. It was very difficult to specialise on such a subject. There were varieties of soil and localities, and he would say to everyone engaged on this subject, "Do not tie yourself up to an eight-course or any other system, but open your eyes and your ears, and every faculty you possess, and see what is best." If near a town the farm might be utilised for vegetables, although they had not been worth much lately; or one might dairy, or sell the produce to dairymen.

If near a factory one might try and grow the raw material that the factory used, and if one had rail or water-carriage, try and utilise them. The same system could not be applied to land that was near a town, a railway station, or a river, that was applicable to a hill, for instance, that was ten miles away from a railway station. It was best to utilise any advantage which one might possess, whether of soil or climate, and do the best one could, and if he might whisper a piece of selfish advice he would add, "Don't write to the papers or make speeches at Institutions about it." He spoke feelingly on this subject, because he used to do a quiet business in jam, and the currants which four years ago he sold at £32 a ton he had to sell at £18 now, in consequence, possibly, of a certain speech made by a celebrated legislator. He thought Mr. Wells did not require this hint, for although peas were not mentioned in his course he (the speaker) had during the last two years paid a long price for two fine samples of podding peas, which he subsequently found were grown by Mr. Wells. But while he recommended dependence on common sense, it must not be taken for granted that their forefathers were

fools. He mentioned that in reference more especially to bare fallows. It was quite right when prices were inflated to grow one crop, or two, in a year if one could, but with the present low prices of produce and high price of labour, he had come to the conclusion that more money was grown on heavy land—and, after all, one wanted to grow money,—or less money lost by six crops in seven years than by seven crops in seven years. It was very well to talk about growing a crop every year, and digging quitch at 5*s.* an acre, but taking the seasons all round, wet seasons as well as dry, he would say a slower system was more likely to be successful. He liked the "nimble 9*d.*" better than the "slow 1*s.*," but it was apt to be *so* nimble in the present day that it might escape one altogether, and it was better to have a "slow 6*d.*" than nothing at all!

Clover was omitted from Mr. Wells's course. He claimed for clover that it was one of the cheapest crops that could be grown, and the most profitable after it was grown. It was a great mistake, he thought, to omit it from a course of cultivation. Mr. Wells hinted that, in these times of low-priced corn, a clover-crop should not be succeeded by a white-straw crop; but recommended mangolds to follow clover, if clover were grown. He (the speaker) had recently himself adopted the practice of following clover by a crop other than a white-straw one; but he should like to ask Mr. Wells how he would grow mangolds on clover-ley that was so foul that he was afraid to grow a white crop on it with one ploughing only, which was all Mr. Wells allowed for any crop.

With regard to the suggestion made by Mr. Brown at the last Meeting, as to the leaving over the leys for another year or two, he would suggest an alternative of laying down with these years mixture of seeds, instead of leaving the clover-leys as an after-thought. If properly laid down, the

land would be sure to pay its way while down and would afterwards come up fresh for cropping. This system had been practised in some parts of Lancashire for many years. He thought in these days of 32*s.* wheat it would be a better system than leaving the leys over; or, as they said in Essex, letting them fall down instead of laying them down, a practice which creates a nursery for the enemy, couch-grass, of which they had heard so much. On the debtor side of Mr. WELLS's list there were some items on which he would like to say something. He said nothing about the first item of rent, for he thought that the Members of the Institution were capable of arranging that question as between landlord and tenant: the question before them was, —how best, in the interest of both landlord and tenant, to get a return from the land. The "tithe" of 10*s.* an acre, in many cases, might be called, in these days, more appropriately "the moiety." It was commuted by Act of Parliament, and he was not going to say that what an Act of Parliament commuted it might not commute again; but he thought, in the interest of landowners, it wanted seriously looking to.

As to rates at 5*s.* an acre, the amount of the rates was too often overlooked. The first business on entering a farm, whether as agent or occupier, was to look to the rating of the farm. He had had some trouble with assessment committees in the matter, and he did not consider they were so reasonable as they should be. He thought the question needed some man, or body of men, public-spirited enough to carry it, if need be, to the House of Lords, who should be asked to decide whether land let at 5*s.* an acre, after it had been advertised perhaps for years, should be rated at 10*s.* or more.

The next item he would mention was manure. Mr. WELLS seemed to use nothing but farmyard-manure. He believed 1*s.* spent in lime went almost as far as 10*s.* spent

in farmyard-manure. He would also add (although in this matter he was speaking somewhat theoretically) that the same remark applied to the application of kainit to land deficient in potash.

Mr. Wells had put 12*s.* as the cost of ploughing. He did not think land should be debited with 12*s.* as the cost of ploughing in these days. It was a higher figure than 2-horse ploughing was valued at between outgoing and incoming tenants, and everybody plagued with the cultivation of land should do their best to grow their horses while ploughing land. He had found it an advantage to use young horses for ploughing and to sell them for town work afterwards, and then, if a man were a careful horse-dealer, he would certainly plough his land at less cost than 12*s.* an acre! In reference to steam-cultivation he should like to record his testimony in favour of the roundabout system which he had used for years, and by which he was able to plough his land at a uniform and not excessive depth. It was impossible to plough land at a uniform depth with the double-engine system, with a direct pull from the engine and without a balance-plough; but with the rope round an anchor, and a balance-plough, he found he could, if necessary, plough 4 inches deep instead of being compelled to pull up so much yellow clay—a practice which had wrought much mischief in steam-cultivation. He could give figures as to the economical way in which he had ploughed his ground and made his fallows for the last seven years, thanks to the roundabout cultivation. In theory it appeared to be wrong, in consequence of fiction and so on, but in practice he found it right.

As to harvesting, whether a sheaf-binder or manual labour were used, the great thing to see to was when the corn was ripe to get it into stack at the earliest moment, whether it cost 5*s.* or 20*s.* an acre to do it. If

men could be got to cut it let them do it and get it in as quickly as possible. If not, then have recourse to a machine, though he believed the binder would knock some of the corn out and leave some of the straw in the field; but anything was better than to leave the corn exposed to the elements.

Mr. C. H. Newman (Professional Associate) thought Mr. Wells should have given the number of sheep he kept, the number of cattle, and the size of his farm. The result of Mr. Wells's calculations seemed to be that rents in his neighbourhood must come down some 55 per cent.

With reference to the rotation of cropping which he recommended, had he chosen to follow in the last four years of his eight years' rotation the same course which he followed in the first four years, he would have realised, he thought, a greater profit—that is, taking wheat, swedes, barley, and beans,—the rotation for the first four years,—it would be seen that Mr. Wells's net profit, after deducting the losses in the second and fourth years, came to £6 2*s.* 3*d.*, while the profit of the next four years, out of a rotation of wheat, vetches, oats, or barley, and mangold, was only £4 10*s.* 8*d.*, making up his total net profit of £10 12*s.* 11*d.* for the eight years' rotation.

Mr. G. D. Yeoman (Fellow) quite agreed with Mr. Wells that tithe was "only another name for rent, so far as the "tenant was concerned, and, whether payable to a college, a "religious body, or a layman, is no hardship whatever on a "tenant," and that the tithes should be treated as rent, and be paid, if possible, by the landlord. He also agreed with him as to rates that "the owner of the soil has a just cause "for complaint that his property should almost entirely bear "the expense of providing various necessaries for the enjoy-"ment of all." He could not, however, agree with him that

the value of farmyard-manure was 7*s.* 6*d.* a ton, for he considered 5*s.* a fair price for it.

The author had mentioned thistles in referring to noxious weeds. He had heard it stated—he did not know with what degree of truth—that thistles did not seed, and that a Farming Society had offered a prize to anyone who could prove that thistles could be grown from seed.

The author set down his ploughing at about 12*s.* an acre, but he was rather inclined to endorse what others had said—that 9*s.* or 10*s.* an acre was a fair price for it. Again, 3*d.* a ton for loading manure seemed to him to be just double the proper cost, seeing that one man could fill 20 loads a day.

Though Mr. Wells did not speak very highly of the cutter, he agreed with the last speaker as to its value, and had employed it on his own farm. He had seen Messrs. Howard's Combined Cutter worked for two or three seasons, and had never seen better work. Hardly a straw was left, and it saved both labour and time in harvesting.

According to the author's accounts, he had only ploughed his land eight times in eight years, which struck him as rather extraordinary; at any rate, with reference to land of average quality in this country, and he could not help thinking that some further explanation was wanted with regard to this item. As had already been pointed out, 10 tons of swedes was an exceptionally small crop; 20 tons would probably be nearer the proper mark.

In a letter which he contributed to the *Field* about twelve years ago, he gave a rough statement of the payments and receipts per acre on fair good land of medium consistency. Without going into details, he would give the general results of his computation at that date for a four-course shift.

First year (wheat after seeds), expenses £6 16*s.*, receipts £10; second year (turnips), payments £8 0*s.* 6*d.*, receipts

£7 10*s.*; third year (barley), payments £4 18*s.*, receipts £10; fourth year (seeds), payments £3 16*s.*, receipts £4. He ended his letter by saying, "Supposing these figures to re-"present something like a fair average, they show the "expense per acre of arable land to be £23 10*s.* 6*d.* for four "years, and the receipts to be £31 10*s.* per acre during the "same period. This leaves about one year's rent per annum "as interest on capital and payment for the farmer's time "and skill."

He might mention that, at that time, the wheat for the first year represented 4 quarters, at 50*s.* per quarter, £10; second year, 10 tons of turnips pulled off, at 10*s.* a ton, £5, and 10 tons eaten on, at 5*s.*, £2 10*s.*; the third year, 5 quarters of barley, at 40*s.*, £10; and the fourth year, half an acre of seeds, mown for hay, and half an acre pastured, £4.

The author had not mentioned anything about seeds or grass-land, and he could not help expressing his regret that, in a Paper the title of which was "The Cost of Production and the Value received for our various Farm-Crops," such important crops as clover, rye, trefoil, &c., should have been omitted.

Mr. E. Ryde (Past-President) wished to refer to one or two points which were worthy of a little more consideration than they had received in the course of the discussion.

First as to tithe rent-charge. It had become the fashion to speak against tithe rent-charge, thus leading persons who did not understand the question to suppose that there was something in it which was unfair and unjust.

He remembered the time when the Tithe Commutation Act was passed, and the state of things which previously prevailed when tithe was taken in kind, and he did not believe that the present outcry could possibly have

arisen if that previous state of things were as well understood now as it was some forty or fifty years ago.

He thought, therefore, that no opportunity should be lost of pointing out the facts, and doing what in them lay to make the question better understood. He had urged on previous occasions, within the last two or three years, that the present state of the money-market afforded an admirable opportunity for doing away with tithe rent-charge. If the Government would lend their credit to enable the necessary money to be borrowed at 3 per cent. to buy the rent-charge at 4 per cent., the difference of 1 per cent., accumulated as a sinking fund, would, in a few years, at the same annual cost to the landowner, extinguish the tithe rent-charge. In any event the tithe rent-charge was not a tax on the tenant, and the statement made on a previous occasion in that Hall that land subject to tithe rent-charge commanded a higher rent than land that was not so subject must have been based upon some misconception of the facts of the case; for it must be obvious that no farmer would pay a larger rent for land because he had the privilege of paying a tithe rent-charge in addition. The fact was, that land did not command so high a rent when there was a rent-charge on it as when free of it.

The author, in his illustration, put the rent at 40*s.* and the tithe at 10*s.* He, perhaps, lived in a highly-tithed district; for the two sums were unusually disproportioned. It used to be said that arable land which would let for 30*s.* an acre would carry a tithe of one-fifth of the rent, or 6*s.*, and that the same quality of land laid down to grass would carry a tithe of a similar amount, or one-seventh of the rental value of 42*s.*

When the author came to readjust his figures, on page 110, he put his rent and tithe at 27*s.* 6*d.*, assigning 17*s.* 6*d.* to the former, and 10*s.* to the latter; but the rent would be

a little more than 17*s.* 6*d.*, if, as he assumed, the tithe rent-charge were slightly in error in the first instance. In the next place he might observe that the correction would be greater if the average price of wheat was to be 32*s.* a quarter, and not, as formerly, 56*s.* The exact difference between the value of the rent-charge, when wheat was 56*s.*, as compared with 32*s.*, he was not prepared to state on the spur of the moment, but it was probably something like 30 per cent.

With reference to the once ploughing to which reference was made in the Paper, and by previous speakers, all he could say was that he knew of no such farming and was not surprised to hear that it cost under such circumstances as much as 5*s.* an acre to get rid of the couch.

He was pleased to see such a Paper as this in the "Transactions," and it was likely to be useful to those who did not quite know what price to apply to different agricultural operations; but he would not advise anyone to take a farm on the basis of any calculation of the kind. Whether land cost 12*s.* an acre to plough, or 10*s.*, or 7*s.*, as one gentleman had said, depended upon the amount of work got out of the horses or men, and the number of horses and men which the maximum work on a farm at any one time rendered it necessary to keep.

The tradesmen's bills were serious items in farm-accounts —the harness-maker, the wheelwright, and the blacksmith, and such, could not be properly estimated in the way attempted in the Paper.

With regard to cutting corn, he found it advantageous to have a machine to cut it, letting his own men tie it up. Whether it should be cut with a machine or by hand entirely depended on the way in which the corn stood. Last year he could have cut it perfectly with any machine; but in some previous years it would have been impossible to do so except by hand without great waste.

For threshing he had reverted this winter to the flail, which saved dismissing his men, though he was not prepared to maintain that the results were in other respects particularly satisfactory.

Mr. Wells, in reply, said he had expected his Paper would meet with considerable criticism in consequence of his temerity in offering arbitrary figures with reference to the cost of production, seeing how greatly the figures varied in different districts.

Dealing *seriatim* with the remarks of the Members who had done him the honour of discussing his Paper, he might observe first that Mr. Burrows said he used from 30 to 35 tons of farmyard-manure and, subsequently, 4 or 5 cwt. of superphosphates in the production of a 40-ton crop of mangolds. It was curious, referring to figures and prices, that Mr. Burrows still left his mangold-crop with a debtor-balance; for one could not possibly allow half the cost of 35 tons of farmyard-manure to be carried on to the wheat-crop, for not only would there be no profit at all, but a tremendous loss. His price of 56*s.* a quarter for wheat had been criticised on several occasions. He fixed it at that price as the Tithe Commutation price, which held for many years, but he had been careful to modify the figure later on.

The same gentleman observed that "the author of a recent Paper on 'The Reform or Ruin of Agriculture' seemed to consider that the 'only hope of the farmers lay in a permanent and substantial reduction of rents.'" He (Mr. Wells) did not say for his part this was the *only* hope; but the only hope for the landlord and tenant was for the land to remain in some sort of cultivation, unless, indeed, it were all laid down to grass.

It might perhaps be objected, especially by some of the Members who knew something of him by reputation, that he

No. 229.

AT

THE ORDINARY GENERAL MEETING

Held on Monday, January 25th, 1886.

THE PRESIDENT (MR. E. I'ANSON) IN THE CHAIR.

The discussion on the Paper by Mr. E. SMYTH, entitled "The Copyhold Enfranchisement Bill, 1884-5," read at the Meeting of Monday, November 23rd, 1885, was resumed by

Mr. E. RYDE (Past-President), who commenced by observing that the Paper, able as it was, did not, from its nature, lend itself very readily to discussion. Indeed, some might be inclined to think that Mr. SMYTH was to some extent "whipping a dead horse." He had been strongly of opinion all his business life that it would be a good thing for the landed proprietors if copyhold tenure were done away with, and, entertaining that opinion, he was not surprised to find that there were persons who were endeavouring to bring about that result. While approving of the objects of the Bill before Parliament, he was not prepared to endorse all its provisions, though Mr. SMYTH had probably been somewhat premature in assuming that the more objectionable provisions would necessarily remain in the Bill after discussion in both Houses and in Committee.

He gathered that Mr. SMYTH would not enfranchise a copyhold if neither the lord nor the tenant for the time being desired to enfranchise. His own view, however, went much

further. He would enfranchise copyholds compulsorily, for the good of the country and for the sake of having the land as free and unfettered as possible. He used to think with a good many others that nothing could exceed as a security the value of a piece of land held in fee-simple without encumbrance; but looking across to the neighbouring country of Ireland, a state of things might be seen worse than the worst evils that could arise from copyhold tenure—worse, indeed, than any state of things ever known at any previous time in this country.

In going in detail through the various clauses of the Bill, Mr. Smyth had taken great exception to the penalty which the Bill proposed to put upon the lord who did not enfranchise on the first opportunity—the forfeiture, namely, of his manorial rights. That, of course, would be confiscation; and it was very unlikely that such a provision would be permitted to pass by the British Parliament; but it would be most desirable, in his opinion, that any Bill of the kind should contain provisions compelling enfranchisement in every case of death or alienation, subject to arrangements which would prevent hardship arising in the case of tenants who were not prepared to pay a large sum of money down, and he knew of no better way of meeting such cases than the creation of a 4 per cent. rent-charge on the property for converting it into freehold.

As to the fees to surveyors proposed by the Bill, he quite agreed with Mr. Smyth that the scale was most unsatisfactory.

The method of calculating the compensation for enfranchisement proposed in the Bill, and commented on in the Paper, was wholly theoretical and impracticable. If he understood the method rightly, it started by taking the gross estimated rental of the property as it appeared in the parish rate-books, which was simply absurd. There were many

pieces of copyhold property mixed up with freeholds, without any physical divisions whatever. A 5-acre field sometimes consisted of, say, 2 acres of copyhold and 3 acres of freehold; the parish books showing no distinction between them: or perhaps even the 5-acre field was not separately rated, but stood as part of a 500-acre farm. Or take the case of a piece of building land not yet cut up for building, though quite ripe for it, but let as an accommodation meadow, and rated as a piece of grass land. In what way would the rateable value of that meadow, even if it could be arrived at, give any assistance in the matter of copyhold enfranchisement? So that any such plan as that could not possibly be worked out. Nor should it be, even if it were possible, for the Parochial Assessment Act provided that every hereditament should be rated at its annual value. The only terms, of course, that would be equitable in the enfranchisement of copyholds would have reference to the fee-simple value of the property, and not to the annual value. He agreed with Mr. Smyth, therefore, in thinking that this provision was simple nonsense.

The enfranchisement of minerals was a difficult subject. In some parts of the country the minerals were worth more than the land, and in those cases the matter should be left to work itself out in some simple practical manner, according to the various circumstances under which it occurred. But a bed of gravel on Hampstead Heath (taking this merely as an illustration) should not be dignified with the term "minerals." A piece of land in such a situation, if enfranchised, should carry with it all the minerals and everything else, and should be dealt with as a piece of freehold land, with all belonging to it, without any second interest in it.

Next, as to the very elaborate Table which the Commissioners issued many years ago, and which he supposed

they fondly imagined Surveyors acted upon. It was set forth at page 49 of the Paper, and was carried out to six places of decimals. A minimum of £3, or three years' purchase, was carried up to a maximum £5, *i.e.*, forty additional shillings, or two additional years' purchase, and was spread among fifty different items to six places of decimals. These numbers of years' purchase, or pounds (or to use the language of the Table, the nearest value in sterling money), were to be applied as multipliers to a price which he defied any man to demonstrate he had fixed within 10 or 20 per cent. of the right amount. They were to condescend to divide these two years into one million decimal parts, whilst they could not define what was the exact value of the thing they had to multiply by it.

To take an illustration. A manor which he enfranchised compulsorily for the lord had in it one rather large property, which was about the only large copyhold left in the manor. The owner of that property had possessed it and lived upon it for 45 years, and his predecessor (an uncle) had, singularly enough, also held the property for the same period; thus there were two transactions in 90 years. Now, who could estimate the value of this copyhold to the lord within any reasonable sum? Anyone valuing it at the beginning of the 90 years would have assumed that the average would have been not much longer than Mr. Smyth put it, say 14 or 15 years, but there were in reality, as he had stated, only two transactions in 90 years. He mentioned this to show how ridiculous it was to suppose that it was necessary to have a table with six places of decimals, for calculations of the kind. He would suggest that the table should be used by starting at only $\frac{1}{8}$th; if more than a 3 years' purchase call it $3\frac{1}{8}$ years, then $3\frac{1}{4}$ years; divide the age from 20 to 70 into 16 parts; discard all decimals, and use a handy little table showing those 16

different results.* This would be quite near enough for all practical purposes; indeed, it would be near enough if only the ¼ year were taken. The table of the Commissioners appeared to have been compiled by some gentleman who had great theoretical knowledge and not very much practical experience.

He would not attempt to criticise the result of Mr. SMYTH's experience as to fine-intervals. No doubt it would be very useful to the Institution to have that experience in the form in which it appeared in the Paper. For himself, he confessed that he adopted a rule-of-thumb method, assuming that every 14 years there would be a transaction; but whether there would or not was, of course, a mere matter of chance.

Then there was the question of heriots. On enfranchising the heriot of a given house, how could it be told whether the next tenant of that house would keep a carriage and horse, and have a good valuable animal at his death, or whether he would have only a donkey, or a cow, or a pig? The question of heriots was one which could never be reduced to anything like demonstrable proportions. There was nothing for it but mere "rule of thumb," unless they were dealing with an actual transaction, where a man died leaving a

* The following is Mr. RYDE's Table referred to above:—

Copyhold Commissioners' Tables.		Copyhold Commissioners' Tables.		Copyhold Commissioners' Tables.	
Age of Copyhold Tenant.	Years' Purchase.	Age of Copyhold Tenant.	Years' Purchase.	Age of Copyhold Tenant.	Years' Purchase.
20	3	42	3·5	52	4
28	3·1	44	3·6	56	4·2
33	3·2	46	3·7	60	4·4
36	3·3	48	3·8	65	4·7
39	3·4	50	3·9	70	5

The *net* Annual Value of the property is to be multiplied by the number of years' purchase. Land Tax is not to be deducted.

property subject to heriots, and had animals, so that there would be no difficulty in ascertaining what was the value of the best beast which he left behind him.

The question of the enfranchisement of smaller quit-rents and matters of that kind he had already discussed in that room 15 years ago. He remembered a dispute which he himself had with the Commissioners. He had settled for the lord with a copyhold tenant, for the enfranchisement of a quit-rent at 20 years' purchase. The property was a melancholy little bit of land upon which was what was called a cottage—a mere hovel, which had once been a cottage, but which had fallen into a state of complete dilapidation. The owner of the property had no means for repairing it. The land was not worth one bit more, or very little more, than the heriot. He was enfranchising compulsorily, and he agreed to give 20 years' purchase for it, but he was not allowed to carry out the enfranchisement at less than 28 years' purchase; that being, in the judgment of the Commissioners, the only equitable terms upon which it could be allowed, although for the lord he had agreed for 20 years' purchase.

He would not attempt to criticise Mr. Smyth's arithmetic. Calculations like those contained in the Paper were very interesting to the person engaged upon them, but they did not always attract the attention of a large majority of the Members of an Institution such as this, and this, together with the state of the weather, would, perhaps, account for the scanty audience that evening. It was valuable, however, to have a Paper like Mr. Smyth's in the "Transactions" for purposes of reference, and the Institution was under great obligations to him for preparing so learned and exhaustive a treatise on this abstruse subject.

Mr. A. Garrard (Fellow) proposed to offer only a few remarks on the subject under discussion. Having had a

great deal to do with the enfranchisement of property in the neighbourhood of London during the last 25 or 30 years, he desired to express his opinion that there was no necessity whatever for any alteration such as was proposed by the Bill before Parliament.

It was well known that if anyone wanted to enfranchise his property he could do so, choosing the time when he had the money in his pocket and when it suited him to do it. Similarly, if the lord wanted to enfranchise he could do so, and why the parties should be compelled to enfranchise against their will he could not conceive. People sometimes talked as though enfranchisements only took place in contested cases. He doubted whether more than 1 per cent. of the cases with which he had had to deal had been contested. They had all been arranged, on the contrary, in the most friendly manner. Why, then, should the tenants be compelled to spend their money when it did not suit them to do so, or why should the lord be compelled to insist upon enfranchisement when he did not desire it? He failed to see the advantage of such an arrangement.

One manor with which he had to do in the north of London, 25 years ago, abounded at that time in copyholds. Now there were probably not half a dozen left. Only one of those cases was referred, and even that was not in reality a contested case, but a large property in which trustees were interested, and not choosing to take the responsibility of a voluntary settlement, they called in a third opinion. If the whole of these had been enfranchised at the commencement of the period he had mentioned, would the British public have been any better off? Why, then, should the legislature step in to disturb the existing friendly relations unless it could be proved that some good would result to the public from so doing?

But he would go further than that. By compelling

enfranchisements, in many manors, the value of the property would be actually depreciated. Take, for instance, the manor of Lambeth, where there were frequently sales of copyholds by auction or by private treaty. People who bought them, if they were copyholders of the manor, would be admitted without payment of a fine. If a man being a copyholder should buy another copyhold property and be compelled to enfranchise it as soon as he bought it, of course he would not give so much money for it. He could not see who was to benefit by compelling that man to enfranchise when neither he nor the lord desired it.

He would give another case he had to do with at Islington, where the lord had compelled the enfranchisement of some four or five houses belonging to some ladies, who were tenants for life, and the only income they had was £100 or £150 a year, derived from this property. They had to pay to the lord some £20 or £30 out of their income, which was a very great hardship on them.

He just mentioned these few facts as a practical man who had had to do with cases of this sort to a very large extent, and as one who set his face as far as he could against any unnecessary interference with what might be called the rights of property as tending to depreciate its value without any corresponding advantage.

Mr. H. C. Newmarch (Professional Associate) thought that arguments which might be urged in favour of copyholds in the neighbourhood of large towns, and of the Metropolis more particularly, did not apply (at any rate with equal force) to country copyholds. The latter were open, he thought, to many objections. He was not prepared, for a moment, to defend anything in the nature of confiscatory legislation; but copyhold tenure, it could hardly be denied, was a base and inferior sort of tenure, and one to be

got rid of, if possible, as it was associated with many unjust and inconvenient incidents. Take the case of shooting rights. He had seen cases, in his comparatively short experience, where the copyholder suffered very great hardship by having his preserves shot over by the lord. He was aware that the right of shooting over copyholds was very rarely exercised by the lord, but where the lord did exercise it the copyholder, very naturally, resented it. He had a case, in the north of England, in his mind, in which a young copyholder, who had recently come into his property, took a very great interest in preserving game, and was much annoyed, at the end of the second year of his tenure, to find that the lord was coming down to shoot upon his property. No one, of course, could stop him from doing so, as he was within his legal rights, though he was shooting game which was reared and fed by the copyholder.

Any legislation which would have the effect of accelerating the enfranchisement of copyholds in this country would, he believed, tend greatly to the public advantage.

He would not make enfranchisement compulsory upon any present tenants or lords, but in the case of all future dealings with copyholds the tenant should, he held, be compelled to enfranchise, unless he happened to be a lunatic or under some special disability, the cost of the enfranchisement being borne equally by the two parties, for the reason that it would be an advantage to both.

He entirely agreed with Mr. Ryde with regard to the extreme difficulty of dealing with minerals, and would be inclined to except them in enfranchising copyholds. The working of minerals in small properties was almost an impossibility; and where a copyhold of small area was enfranchised, it would be practically useless to the copyholder to hold them. When the mineral happened to be coal, it would probably have to be worked by means of a

shaft sunk at a considerable distance, and there would be great difficulty where the minerals passed with the freehold in getting a number of small freeholders to agree to the same terms, as he had found in a recent case in which he had been engaged in Yorkshire.

Where, as in the majority of cases, the minerals were merely gravel and sand (which were not strictly minerals), the same difficulty would not arise, and they might fairly pass with the land, as they were only accessible from the land, and not from beneath it. Except as to coal and similar deep-lying minerals, he was in favour of abolishing all manorial rights, including the right to fishing, which often operated as a hardship to the copyholder.

Mr. Smyth, in reply, expressed his thanks for the generosity of the Institution in publishing the Paper.

With reference to what Mr. Ryde had said about its having been rather like whipping a dead horse, it might be remarked that the Bill had been introduced into Parliament in several successive years. It had been referred in 1884 to a Select Committee of the House of Commons, which, however, refused to receive any evidence on the part of either the lords or the copyholders; and it then passed the Lower House substantially as it had been returned by that close Committee. He thought, therefore, that it was time the Bill should be discussed by the Institution; for, as he had ventured to say in the opening paragraph of the Paper, the reappearance of the Bill might be safely predicted. Accordingly, at the present moment, on the Order-book of the House of Commons a Bill upon the subject stood for second reading on the 24th February, and the honourable members who had brought it in were either some of those who had backed the Bill on the former occasion, or some of the Select Committee to whom the Bill had been referred. He had

no doubt, therefore, that it would be found to be the same in its objects as the Bill of last year.

He had written nothing adversely to enfranchisements when they were desired by the tenants. He had wished that any tenants who were under disabilities should have those disabilities removed, and that any expedient further facilities for enfranchisement, when desired by the parties themselves, should be granted. Thus he had proposed that the tenant should never be required to pay the lord's valuer —that was at page 41. At page 45 he had offered a suggestion for the settlement of that mineral difficulty, which the Bill most improperly shirked altogether, but which was the subject that most needed settlement. At pages 43-4 he had made proposals that, whether for conversion of a property into freehold, or whether for continuance of the copyhold tenure, any tenants at fine-arbitrary should have the option of requiring the lord to accept—in lieu of his rights—equivalent annual payments; these would, in such tenancies, be of much larger amounts than the petty rent-charges he had deprecated on page 79, as arising under the Bill in fine-certain cases. These several proposals he regarded as constituting a reasonable alternative for this singular Bill, which proposed to enforce enfranchisements against the will, and presumably, therefore, against the interest, of both parties, and to deprive contented copyholders of their present title, which is now so clearly traceable in the Court Rolls.

There were, certainly, two reasons which had been alleged for that course, and of which he had hitherto taken no notice. One was that copyholds were a "relic of the feudal system," and that seemed, with people who knew little about copyholds, to carry very great weight; and it had even been brought forward by some persons from whose knowledge of the matter one might have expected stronger reasons. He had preferred to look upon the tenure with

reference only to its merits and its demerits, and not to regard its origin. If copyholds were to be abolished simply because they had grown out of the feudal system, there was precisely the same reason for proposing the abolition of the Monarchy.

Another reason which was alleged, and of which he had not taken notice, was, that sometimes a purchaser of a property which he had supposed to be freehold was suddenly surprised by finding that it was subject to some manorial incident that had not been disclosed. Well, in a very exceptional case of that kind, where a purchaser unfortunately had careless lawyers, it would be much more reasonable that he should be left to his remedy against the vendor, than that thousands of copyholders should be interfered with by this Bill in order to prevent the possibility of a similar oversight on some future occasion.

In such remarks as had been made in the Institution in the direction of support to the main purpose of the Bill, he had noticed nothing fresh; and therefore he hoped to be excused for regarding those remarks as being less an answer to the Paper than the Paper itself (in its first division and in its appendix), as being his answer to those remarks.

He had anticipated until that morning that they would have had as a visitor the solicitor, Mr. Richard Nicholson, who had taken a leading part among stewards, in opposition to the Bill; but that gentleman had to-day written to him, that he found himself quite unable to come, and had therefore sent in lieu a print of his "Reasons" against the Bill, which had been circulated extensively among members of the legislature, and to which, if he (Mr. Smyth) mistook not, Lord Bramwell referred in terms of commendation when his Lordship opposed the Bill in the House of Lords. That print he now handed to the Secretary for decision whether it might not be suitably appended to the report of this dis-

cussion.* He should add that he found it to refer to the form in which the Bill stood prior to its modifications in the Committee stage.

An observation had been made by Mr. NEWMARCH to the effect that sporting rights should not be reserved to the lord. From the nature of the rights embraced by Clauses 29 and 30 of the Bill, and referred to on page 44, he (Mr. SMYTH) thought it by no means unreasonable that, as proposed by the Bill, either lord or tenant should be able to insist upon such rights being valued and included in the enfranchisement of the land. As regarded Mr. NEWMARCH's further remarks respecting the desirability of enforced enfranchisement in rural districts, they were based (so far as he remembered them) on no expressed reasoning, but rather on the sentiment that there should be "only one tenure." Perhaps Mr. NEWMARCH, however, had reasons not brought forward in support of his view.

With respect to minerals, he should have been very glad if the gentlemen who had referred to the difficulty of that question would have criticised the suggestions which he had made on this subject. He would ask permission to read just a sentence or two from the Paper relative to this matter.

"The only course which occurs to me with regard to "minerals is that, whenever lord and tenant differ as to "how these or certain of them shall be dealt with on an "enfranchisement, either party should be at liberty to refer "to the Land Commissioners to say what minerals, with "specified rights of winning them, shall be vested in the "tenant and the lord respectively. The Commissioners "could govern their decision by a regard to the nature and "position of the minerals in question, and by the circum-"stances of the ownership of other such minerals in "surrounding lands. The aim would be that the workings

* This Paper is reprinted after page 174.

throughout a large tract shall be facilitated by simplification of ownership; and the respective rights, whether of working or of obstruction, possessed by either party, and to be acquired by the other, would be the subject of valuation. In any cases in which lord and tenant are now unable to agree upon terms for the working of minerals under lands which either are copyhold, or have been enfranchised with mineral reservations, the tenure would cease to be an obstacle if it were thus put in the power of either party to require that the minerals shall be dealt with by an enfranchisement in the above way."

Although he had no admiration for the Commissioners' Enfranchisement Table, and had amply shown it to possess only very slight intrinsic worth, he had great esteem for the Land Commission as a whole, and he thought that this highly useful and most important duty as to minerals might be safely entrusted to it.

He would merely further express a regret that it was not the practice of the Institution to allow the writer of the Paper to have the last word, because he was thereby prevented from showing any consideration of the remarks of precisely that gentleman to whose position he would naturally wish to have the chief regard.

The Chairman said that his experience in copyholds was not very great, but such as it was it induced him to think that there was a great deal to be said on both sides of the question under discussion. It did not strike him that the subject was by any means exhausted, and he trusted it would be resumed on some future occasion. He had much pleasure, on behalf of the Institution, in thanking Mr. Smyth for the very lucid manner in which he had replied to the observations made upon his Paper.

The discussion then terminated.

The Paper by Mr. Nicholson, *referred to by* Mr. Smyth *at page* 172.

REASONS AGAINST THE COPYHOLD ENFRANCHISEMENT BILL.

This Bill is unnecessary and uncalled for

Because—

(1) Every Copyholder can now, under the Acts of 1852 and 1858, compel enfranchisement on fair terms at his pleasure; and if the extinguishment of Copyholds has not proceeded fast enough to satisfy the demands of the Promoters of the Bill, the reason is to be found in the absolute indifference, if not in the objections, felt by the Copyholders themselves to bring about results which they do not desire to obtain, but which the Bill seeks to force upon them all, regardless alike of their convenience and of their interest.

(2) The fact that the enfranchisement of Copyholds has not proceeded at a more rapid rate is evidence of itself, if not conclusive evidence, that neither lords nor tenants are dissatisfied with, but, on the contrary, prefer to remain under, a system which allows the full enjoyment of the property by the tenant, and provides the cheapest and simplest mode of land transfer.

The Bill is objectionable

Because—

(3) It involves compulsory enfranchisement, even though lord and tenant may not only have no desire, but may absolutely object, to enfranchise.

(4) It will inflict great hardship upon any Copyholder who may be compelled either to borrow the money to pay for the enfranchisement, or to submit to a 4 per cent. rent-charge upon his property in order to provide the means for acquiring the fee-simple against his will; and the Bill must, in the most favourable view, operate as a means of increasing those charges, attaching to real property, which are most severely felt by small proprietors.

(5) It seeks to cast upon Lords of Manors every expense which may be incident to compulsory enfranchisement; and there is no reason, or excuse, for placing Lords of Manors under penal legislation.

(6) The machinery provided by the Bill, for carrying into effect the scheme contemplated by it, is crude and imperfect, and, having regard to the existing law, absolutely unnecessary, and must work unfairly and unjustly as regards the interest of Lords of Manors, and in such a way as must subject them in all cases to some, and in many instances to serious, pecuniary expense.

(7) The Bill provides that the payment of compensation to the lords shall be made by rent-charge *only* equivalent to 4 per cent., upon the amount of compensation money, which however may be redeemed at any time, at the option of the person or persons for the time being in actual possession, or receipt, of the rents and profits, on payment of twenty-five times the amount of the rent-charge so created.

(8) Distress, the only remedy for enforcing payment of a rent-charge, cannot be levied without risk, unless the lands subject to it are known or can be defined with certainty. The Bill relieves the Copyholder from his existing obligation to define the bounds of his holding, and practically throws the expense of ascertaining the identity on the lord. The expense of this will, in many cases, if the description on the Court Rolls be vague, as it almost always is, exceed the value of the rent-charge.

(9) The Bill casts on the lord the burden of giving the initiatory notice; and thus involves him in the odium of enforcing enfranchisement on unwilling Copyholders, a course which Lords of Manors have, hitherto, as a rule avoided, and the prescribed notice is altogether unnecessary, except for the purpose of increasing expense.

(10) The lord is directed by the Bill to deliver, with the notice of enfranchisement, a written offer to take a sum of money as compensation under penalty of having to pay the costs of the proceedings, if he demand more than the sum ultimately awarded. The lord may, therefore, be called upon to put a value upon property which he cannot define, and with reference to which the Bill does not give him any facility for obtaining from the tenant the knowledge which he alone possesses; and, still further, the scheme of making an offer obligatory on the lord imposes upon him the necessity and expense of calling in a valuer, to advise him, in order to lessen

the chance of the penal consequence attaching to a mistaken estimate of value.

(11) Inasmuch as it proposes to give the tenant power to charge his Copyhold with the enfranchisement money, there is no reason why he should not pay the lord at once.

(12) Legislation authorising the compulsory purchase of land has hitherto proceeded upon this well understood and most reasonable basis, viz., that an owner required to part with his interest compulsorily shall be entitled to have the value of it paid to him on completion of the purchase; and, further, this principle is authoritatively established by the Lands Clauses Act, and by the Copyhold Act of 1852, section 7; whilst under the provisions of the former Act, a vendor has the option of determining whether he will accept his purchase-money on completion, or a rent-charge in substitution for it; and the Copyhold Act of 1852 provides that, unless an enfranchisement be at the instance of the lord, he cannot be compelled to accept payment in the latter way.

(13) There is no reason, and no excuse, for this new departure in the Land Laws, calculated as it is to be productive of the greatest possible inconvenience, and to lead to endless difficulties, especially in connection with settled manors, and in all cases where the lord is not absolute owner.

(14) The ostensible object averred by the Bill, namely, the general Enfranchisement of Copyholds has been already provided for through the machinery of the Copyhold Acts of 1852 and 1858, which thoroughly answers this purpose, and is ready at and for the more rapid development of the process on equitable terms, if either lord or tenant desires to avail himself of his power of compulsion.

(15) Large numbers of enfranchisements have already taken place under the Acts referred to, and still larger numbers by arrangement between lord and tenant, and experience points to the fact that there is rarely any difficulty in arranging terms with Copyholders desirous of enfranchising.

(16) The Bill points to the exclusion of enfranchisement by agreement except with the consent of the Land Commissioners, which means expense, and to the introduction of officialism, which means delay.

(17) The power proposed to be given by the Bill to any

person having an interest in enfranchised land to pay up the balance of the enfranchisement money at any time, may altogether upset the pecuniary calculations and family arrangements made by the Lord of a Manor, and as regards settled manors, may, in this respect, give rise to the greatest inconvenience and confusion.

(18) A Lord of a Manor, tenant for life, or the Trustees of the Settled Estates, may be required to accept a host of small rent charges—in fine-certain manors, more generally than not, amounting to a few shillings a year—simply in order that Copyholders may have the means of becoming possessed (probably against their will, and although they have not the means of paying down the consideration for the purchase) of the interests of those who may have no desire to sell.

(19) It will involve lords and tenants alike in heavy charges for commissioners, valuers, and other expenses, in order to bring about a result which neither lord nor tenant may desire to attain.

(20) It is a mischievous interference with the rights of property, involving, as it does, compulsory sale, and compulsory purchase, against the will of vendor and purchaser.

(21) The proposal that any five tenants of a manor may, under any circumstances whatever, at their will, impose on their fellow tenants (probably hundreds of people) the obligation to further investments in land, by the change of their tenure against their will, is a novel, startling, and dangerous departure from the principles which have hitherto guided the legislature in its dealings with the laws affecting land, and there is no reason why a small irresponsible minority should have any such power.

(22) That the provision in the Bill, whereby the compensation to be paid to the Lord of a Manor in respect of Copyholds held by fine-certain is limited to "not more than three fines," involves an arbitrary and unjust method of assessment, which leaves out of calculation altogether the value of the various incidents of forfeiture which attach to Copyholds as such—by reason of waste, working minerals against the custom, destruction of boundaries, &c.—and constitute an important element of value to be taken into consideration in calculating the lord's interest in Copyholds, whether held by fine-certain or otherwise.

Paper 135.
No. 230.

RIGHTS OF FORESHORE.

By H. B. HANS HAMILTON (Associate)

(barrister-at-law).

Read at the Ordinary General Meeting of The Surveyors' Institution, *Monday, February 8th*, 1886.

MR. W. J. BEADEL, M.P. (VICE-PRESIDENT), IN THE CHAIR.

The realm of England reaches down to low-water mark, and thus includes the sea-shore within its boundaries.

The term sea-shore, or foreshore, itself, in its strict legal sense, defines the soil which lies between the sea-bottom and dry land. The sea-bottom, or *fundum*, is that soil which is *semper aquâ maris cooperta;* the dry land, or *terra firma*, ranges down to the ordinary high-water mark. Hence the sea-shore is that portion of land between the high and low-water marks, which is alternately covered by the tide or left bare by the receding waters.

In Roman law, the shore extended *quatenus hybernus fluctus maximus excurrit*, a boundary-line equivalent to the limits of our high spring-tides; and in common parlance the word "shore" has a yet more extensive meaning, being often taken to imply all that extensive belt of waste ground or strand and rocky coast which is contiguous to the sea, and is liable to the action of every kind of tide, and of which the part next the land is seldom or never covered with water. But the legal limits of the sea-shore, which had long been matter of controversy, were finally settled by the decision in the case of *A.-G.* v. *Chambers* (4 de Gex, M. & G. 206), in

which Lord Chancellor Cranworth held that the boundary of the sea-shore landwards is the line of the medium high tides between the springs and neaps, thus defining the foreshore to be the soil covered by the *ordinary* flux of the sea.

It is a matter of importance that the limit of the sea-shore, and consequently of the adjacent land, should be definitely fixed, as in marshy districts and fens along the coast, the low-lying lands which are liable to the action of *extra*-ordinary tides, are frequently of considerable extent and value, and the limitation of the sea-shore to the line of the ordinary tides became of great importance to the holders of the lands thus visited by the sea. It was admitted that high spring-tides, being essentially extra-*ordinary*, could not affect the right of the subject in the land over which they spread; but it was contended that *spring-tides*, being periodical, and of regular occurrence, might be regarded as ordinary also, and that the marshes subject to those tides might come within the terms of the definition *littus maris*. But the spring-tides, although periodical, cannot be termed ordinary; for that definition belongs in first place to the regular tides, which happen daily, twice in the twenty-four hours; and therefore the action of the spring-tides cannot alter the limits of the land, or affect in any way the right of the subject in respect of title or ownership therein. (*Lowe* v. *Govett*, 3 B. & Ad. 863.)

Hall, in his essay on the Sea-shore, cites the treatise "De Jure Maris," ascribed to Lord Hale, in which the king's property in the sea, tidal-rivers, &c., is aptly compared to the ownerships of lords of manors in the common or waste lands of the manors. In the manor the soil and freehold of the waste belong to the lord, but subject to certain rights of the manorial tenants, such as common of pasture, piscary, ways, &c., claimed and enjoyed by them by the custom of the manor. So is the king lord of the great waste of the sea,

subject to certain beneficial rights and privileges of fishing, navigation, &c., immemorially enjoyed by his subjects therein, by the custom of the realm, which is the common law. (HALL on the Sea-shore, p. 4; "De Jure Maris," ch. iv.)

The land of England, originally vested in the Crown, has in process of time become almost entirely alienated from the sovereign by grants thereof from him to his subjects; but such has not been the case with the sea-shore, except in special instances; and therefore the alienation of Crown lands being now forbidden by statute law (1 Anne, c. 7, s. 5; Doe. a. R. *v.* York, 14 Q.B. 81), so much of the sea-shore as is not at present the property of a subject remains vested in the Crown, incapable of alienation save by the procedure authorised by Act of Parliament; unless the subject can make good his title to the same.

Claims to foreshore are almost invariably made by lords of manors adjacent to the shore, and are founded either upon the right of the manors, according to the grant, or upon prescription supported by user, which shall presume the existence of a grant.

Manorial grants of land adjacent to the sea-shore from the king to a subject have frequently been accompanied by grants of the sea-shore itself. Such an one was the grant or charter of CANUTE to the monks of St. Augustine, recited in "De Jure Maris," of land in the Isle of Thanet, "*tam in terrâ quam in mari et littore*," "as well in the sea and on the sea-shore, as on the land." A grant made by WILLIAM I. to the Abbot of St. Augustine included the whole land of Estanore, "*et totum littus usque medietatem aquæ.*" Similar instances could be cited, and the muniments of title to sea-coast manors furnish many *express* grants of sea-shore, accompanying those of the manors themselves; so that there is no doubt that a subject may be owner of the sea-shore by express grant from the Crown.

When the claim of the lord of the manor to the adjacent foreshore is founded upon the grant of the manor, and the title to the manor itself is not called in question or disputed, then the question becomes really one of boundary rather than of title, and will be settled by the construction placed upon the metes and bounds defined in the grant itself. It may be well to premise that in such cases the construction will be *stricto jure* in favour of the Crown as against the grantee. On this point the opinion of Chief Justice Cockburn in the case of *Feather* v. *Reg.* (6 B. & S. 283; S.C. 35; L. J.Q.B. 204; and 12 L.T.N.S. 114) may be appositely quoted. He says: "It is established on the best authority that in construing grants from the Crown a different rule of construction prevails from that by which grants from one subject to another are to be construed. In a grant from one subject to another every intendment is to be made against the grantor, and in favour of the grantee, in order to give full effect to the grant; but in grants from the Crown an opposite rule of construction prevails. Nothing passes except that which is expressed, or which is matter of necessary or unavoidable intendment, in order to give effect to the plain and undoubted intention of the grant; and in no species of grant does this rule more especially obtain than in grants which emanate from, and operate in derogation of, the prerogative of the Crown." To put it briefly, in grants from the Crown nothing passes unless the intention is manifest that it should pass. (Mr. Justice Bayley in *Duke of Somerset* v. *Fogwell*, 5 B. & C. 875; Jerwood 60.)

Thus if the boundary be expressed in the grant to extend down to the sea, it is presumed the ordinary high-water mark is intended as the boundary-line. But if the boundary-line be expressed to be down to the low-water mark, or extend to any ascertainable limit beyond low-water mark, this will be tantamount to a grant of the sea-shore. In fact, the

boundaries of a manor are such as are laid down in the grant of the manor and no more; and the grant of a sea-coast manor does not by reason of its locality necessarily include the sea-shore within its precincts. Some grants of manors may include expressly not only the shore, but also wreck, royal fish, flotsan, &c., and a separate fishery; others, again, may comprise the shore, but none of these liberties, profits, or franchises; and others may convey all or one of these privileges only, and no part of the shore at all. (Hall on the Sea-shore, p. 19.)

The next point to be considered is whether, in the absence of an *express* grant, or *manifest intendment* conveyed in the terms of the grant, a subject can acquire an ownership in the foreshore as against the common right of the Crown. This can only be done by evidence of prescription; that is, of the immemorial exclusive use and enjoyment of the franchises, liberties, and usufructuary rights connected with the foreshore; and the question is whether the immemorial exercise of such rights and privileges will establish a title to the shore, in the absence of an express grant, or manifest intendment.

On this point the best authorities are at issue. Hall, in his essay on the Sea-shore, is decidedly of opinion that prescription and user alone do not convey a title to foreshore. He draws a distinction between prescription as establishing a claim for a customary privilege, which is in law allowed to raise the presumption of a grant, and prescription as establishing a title to land; and, maintaining the sea-shore to be to all legal intents and purposes *terra firma*, he holds that the same evidence which is needed to show title to land within the coast must be adduced to establish a claim to foreshore. According to Blackstone, "no prescription can give title to land, of which more certain evidence is to be had;" and this is supplied by the

common law of England, which acknowledges the sovereign's absolute ownership in the soil. In the absence, therefore, of express grant, the only support which a claim for title to the sea-shore set up by a subject as against the Crown can have, must be by *adverse possession* for the full period prescribed by the Statute of Limitations, viz., sixty years. The foreshore is technically land, and as such demands the same proof of title as land anywhere else. Land on the sea-coast or in the interior may be acquired by adverse possession and the Statutes of Limitation. So too, if I can prove actual seizin and possession of foreshore for the term of sixty years, the statute law confirms my title to that as to any other piece of land, and there is no necessity for our law to admit other evidence of title to foreshore than it calls for in regard to inland estates. On the contrary, the enjoyment of usufructuary rights connected with the sea-shore, unsupported by actual seizin or intrusion, cannot, according to his view of the matter, be considered as evidence which will establish a title to the shore, any more than common of pasture, of piscary, rights of digging brick-earth, &c., or rights of way upon the waste land of a manor can be regarded as giving a title to the freehold of the soil. (HALL on the Sea-shore, pp. 26-40.)

This is HALL's view. BUTLER, in his annotations to COKE upon LITTLETON (261 a. Note 205), takes a more favourable view of the position of the claimant as against the Crown. He says: "The soil between high-water mark and low-water mark belongs of common right to the king; it is therefore incumbent on the subject to prove his right." If the grant cannot be produced, it cannot otherwise be proved than by prescription; that is, by repeated, unequivocal, and immemorial usage. This may be done by showing that he and those under whom he claims have immemorially, frequently, and without restriction to any part of the shore, dug gravel,

fetched away seaweed or sand, or embanked against the sea. If it be claimed to be part of a manor, the prosecution and punishment of purprestures (trespasses) in the court of the manor, and every other act by which the right to the soil of inland property is established may be given as evidence in support of it. The right to wreck of the sea and royal fish *infra manerium*, is a strong presumption; the shore being parcel of the manor.

In the treatise "De Jure Maris," the case for the subject is viewed in a still more favourable light. "Foreshore," says the learned author, "may not only belong to a subject in gross, which possibly may suppose a grant before time of memory, but it may be parcel of a manor. (Thus it was agreed 5 Reports 107, in Sir Henry Constable's case, and the book of 5 E. 3, 3, cited accordingly.) And the evidences to prove the fact are commonly these: constant and usual fetching gravel and weed and sea-sand between the high-water and low-water mark, and licensing others so to do; enclosing and embanking against the sea; enjoyment of wrecks happening upon the sand; presentment and punishment of purprestures there in the court of a manor, and such like." * * * * * "Perchance," he continues, "it is parcel almost of all such manors as by *prescription* have wreck or royal fish within their manor; for in such case it is great presumption that the shore is part of the manor, otherwise it could not have them." (De Jure Maris, pp. xxiv. xxv.)

It is not easy to say which of the above views rests on the surest legal foundation: foreshore is still, to a great extent, debateable ground, concerning which a certain amount of uncertainty prevails; but there is no doubt that in most cases where claims have been made for foreshore as forming parcel of a manor, the courts have adopted a liberal view, and have admitted evidence of user in support of the

claim. The sea-shore is, unfortunately, in its very nature, so little capable of exclusive possession, that the most undoubted owner of it might find it difficult to support his claim by undoubted proof of exclusive or paramount user. Here, again, the courts have taken a liberal view, and have been inclined to take into consideration the circumstances under which the acts of ownership have taken place, the *animus* which prompted them—*animo habendi possidendi et appropriandi*—and the aggregate strength of the proprietary acts in virtue of which it is sought to establish a title to foreshore; and this even in the case of freehold lands adjacent to the sea, where a manor has not been expressly granted.

The chief kinds of proprietary acts for which the sea and foreshore afford scope have been defined by PHEAR as follows (Rights of Water, *q.v.*):—

1. Taking wreck.
2. Taking royal fish, *i.e.*, whale, sturgeon, or porpoise.
3. The various incidents of a port.
4. Fishing, in the sea and on the beach.
5. Mining, digging, and taking sand, marl, coprolites, seaweed, &c.
6. Taking salvage for grounding of ships.
7. Embanking and inclosing.
8. Punishing purprestures or intrusions (*i.e.*, trespasses).

PHEAR holds that the first three of these acts—namely, taking wreck, taking royal fish, and the various incidents of a port—cannot be adduced as evidence of title to the shore; but in this he is gainsaid by HALL and others; and, as regards the first (the taking of wreck), the opinion in the case of *Dickens* v. *Shaw* (HALL on Sea-shore; Appendix, p. xlv), would seem to admit the taking wreck as evidence in support of title to the shore. As regards the remainder, it is admitted that they all tend, when exercised exclusively,

to show ownership of the soil; and it is needless to remark that the greater the aggregate of the acts of proprietorship proved by the claimant, and the more exclusive their character, the stronger will be his claim to ownership in the soil.

Thus we see that when a subject is desirous to establish his title to foreshore, there are three ways in which he may make good his claim :—

1. By proving an express grant from the Crown;
2. By proving a manifest intendment conveyed by the terms of the grant;
3. By proving prescription or immemorial usage presuming a grant.

And it may be added that of the two latter modes in which title may be established it is perhaps safer to rely upon prescription, provided the user which can be adduced in support thereof is sufficiently extensive, and embraces most of the usufructuary rights, than upon a possible but unexpressed intention on the part of the grantor to pass the shore along with the manor.

We now come to the question of the ownership in land gained from the sea. Such acquisitions may be made in two ways—either gradually or suddenly; and here the law is sufficiently clear. When the increase is so gradual as to be *imperceptible in its progress*, the land thus gained, whether formed in the manner known as *alluvion*, or gradual accretion from the sea, or by *dereliction*, that is, the gradual retirement or withdrawal of the sea, belongs to the owner of the adjacent property. But where the increase is sudden, immediate, or of such kind as to be distinctly *perceptible at the time of its progress*, then the land thus gained is termed "derelict land," properly so called, or land suddenly and by manifest marks left by the sea, and as such belongs of common right to the Crown. (Hall on Sea-shore, p. 108 *et seq.*)

Blackstone (2 Black. Com.' 261) explains the rule on this subject by the principle, "de minimis non curat lex"; but this explanation did not satisfy Lord Chelmsford, who in the case of *A.-G.* v. *Chambers,* held that the rule depended upon the reason assigned by Baron Alderson in the case of the Hull and Selby Railway Company (5 M. & W. 327): "That which cannot be perceived in its progress is taken to be as if it never had existed at all." The whole question was most fully considered in the case of *Rex* v. *Lord Yarborough,* where a tract of salt marsh or fittees of about 450 acres had been formed by gradual alluvion, in which Lord Tenterden, while basing his decision upon the principles already laid down, defined the word "imperceptible" to import the manner of the accretion, not the aspect of the result.

When the sea has by gradual and imperceptible progress encroached upon the land, the soil thus covered becomes part of the shore, and as such belongs of common right to the Crown. When, however, the overflow is sudden, and any marks remain by which the limits of the property thus covered can be ascertained, the ownership in it remains unchanged; and even if land has been suddenly flooded by the sea, and remains covered for years by the waters, the subsequent withdrawal of these will restore the property to its original owner. (Callis on Sewers, p. 51; Hall on the Sea-shore, p. 129; Coulson on Waters, p. 23.)

In cases where land has become separated from the *terra firma,* and surrounded by water, the islands thus created are treated as still forming part of the property of the former owner if they are shown to lie within its limits. With regard to accretions from the sea which arise in such parts of the water (whether along the coast, in an arm of the sea, or in a creek or navigable tide-river) as have become the property of a subject, by grant or otherwise, it is laid down that these

accretions are to be regarded as the property of the subject if they occur within the precincts of the property, on the principle that the soil of his property belongs to him whether it be covered by water or not. ("De Jure Maris," ch. vi.)

From the earliest times it has been at once the prerogative and the duty of the sovereign, as lord of the realm, to protect the land against the incursions of the sea, and to order, if need be, the construction of defences, such as dykes, sea-walls, and other barriers along the coast, at the expense of the persons who derive benefit therefrom. He can also order the maintenance of all existing barriers, whether natural or otherwise, and prevent the destruction of such defences as already exist, whether natural or otherwise, if it can be shown that their removal lays the land open to the inroads of the sea. (Woolrych on Sewers, pt. i., p. 42; *A.-G.* v. *Tomline*, 40 L.T., N.S. 775.) The Crown is, however, under no liability to take action in this matter. (*Hudson* v. *Tabor*, 2 Q.B.D. 290.)

The exercise of this prerogative of the Crown was in the hands of the Commissioners of Sewers, originally appointed under statute in the reign of Henry VIII. (*Statute of Sewers*, 23 Henry VIII., c. 5), who were invested with full powers to survey the various defences against the sea, to order that such shall be maintained in fit condition, or repaired when necessary, at the expense of the respective landowners whose properties were by them affected, and to order such constructions as shall be deemed needful for the defence of the land, the furtherance of navigation, or the public convenience. In former days the jurisdiction of these Commissioners extended over the whole of the coast; but as, at the present day, the ports, harbours, docks, and navigable rivers of the kingdom are almost universally in the charge of corporate bodies of conservators, the powers of the Commissioners of

Sewers are restricted to such parts of the coast as are not under the regulation of such corporate bodies.

As an instance of the powers more recently granted by Parliament for the protection of the realm, I may cite the Act 8 & 9 Vict., cap. xx., passed in 1845 for the purpose of defending the little town of Cromer on the Norfolk coast from the encroachments of the sea, which had done repeated and violent damage to the buildings and other property of the townsfolk. The jetty had been washed away, houses had been undermined, and the very cliffs on which the town is built were in serious and imminent danger. The inhabitants being in these straits, an Act was passed for their relief, and the Commissioners appointed under the Act were invested with special and extraordinary powers. They were empowered to levy special rates to meet the expenses of the works needed for the defence of the town, and to continue such rates for extending their works and keeping them in repair; they could purchase, take, and use certain lands along the sea-beach for the same purpose, with or without the consent of the owner; and they had powers to borrow from time to time such sums as were required for carrying out the works upon the security of the special rates and assessments which they were empowered to make. Similar instances where extra-ordinary needs have called for extraordinary enactment might be appositely quoted.

With regard to the duties of a frontager, or owner of property abutting upon the sea or a navigable tidal-river, the case of the *Nitro-Phosphate Company* v. *London Docks* is of importance as showing that when such an one is under obligation, either at common law or by statute, to keep a wall at a certain height, and he fails to do so, he is guilty of negligence, and responsible for all damage caused by such negligence. In this case* it was shown that the defendants

* 9 Ch. Div. 503; 37 L.T., N.S. 330.

were required by the Commissioners of Sewers to maintain a river-wall in front of their land, at a height of four feet two inches above Trinity high-water mark. With the authorisation of an Act of Parliament they constructed new works the plans of which, deposited with the clerk of the peace, showed the river-wall to be of a uniform height of four feet above Trinity high-water mark; and it was allowed that this wall was at one point several inches below that level. The level of the surrounding country was some feet below Trinity high-water mark. In November 1875 an extraordinarily high tide took place, in consequence of which the water in the dock overflowed the bank and damaged the property of the plaintiffs. The river rose to four feet five inches above Trinity high-water mark; it had never been known to rise so high before. It was held by Fry, J., that in the Act of Parliament the defendants were bound to keep their bank up to the level of four feet above Trinity high-water mark, and were liable to the plaintiffs for breach of their statutory duty in not doing so; secondly, that the defendants were bound as riparian owners to keep the bank up to the level of four feet two inches, the height of the rest of the river-wall, and that they were liable to the plaintiffs for negligence in not doing so; thirdly, that the extraordinary high tide, although an act of God, did not excuse the defendants from their liability for having failed to do their duty. He therefore gave judgment for the plaintiffs; and his decision was affirmed on appeal, with a variation that the defendants ought to have an opportunity of showing that the damage done by the act of God and that due to their negligence might severally be ascertained. (9 Ch. Div. 503.)

It must be borne in mind that the ownership of the Crown in the soil of the shore is for the benefit of the subject, and always subservient to the public right of navigation and fishing, vested in the subjects of the realm. Any

grant of the foreshore to a subject comes under the same category, and where it is shown that the operation of a grant is such as to interfere with the public rights, it can be treated as a nuisance which calls for abatement. The public right of navigation is not confined to the high seas, but extends to the limits of the water, including even all navigable rivers, and the right of free anchorage is a necessary part of the right of navigation.

The extent of this public right has given rise to considerable litigation. It has been argued that it is strictly a navigable right, and to be regarded as affording right of passage over the watery highway which extends over the foreshore and beds of navigable rivers at certain states of the tide, but that it did not include any right of passage over the soil of the shore itself when left uncovered by the water, when the foreshore was the property of a subject, except in the case of strict necessity, or when such passage was a prescriptive right. This view of the rights of the owner of foreshore was supported by the decision in *Blundell* v. *Catteral* (5 B. & Ad. 268); but later decisions have overruled this dictum, and it is not probable that such a view of the case would now find support. For, as it has been held that the free use and enjoyment of the public right of navigation must include all parts which are necessary to complete it, and as the right of navigation exists at all times and states of the tide, it would be absurd to suppose that a right of passage for the purpose of navigation which exists when the foreshore is covered with water, can no longer be exercised when the water has retired. It is as much as if the owner of the foreshore were to say to the fishermen who would anchor their smacks over against his land: "I concede you have a right of passage over my foreshore for the purposes of navigation; therefore you can sail your smacks there or anchor them where you will when the tide serves; but you

have no right of passage over the soil of the foreshore itself, which is my property; therefore when the tide is out, and your smacks lie stranded on the shore, they are lying on my land, and all who would leave them or gain access to them, by crossing the shore, are trespassers." The absurdity of such a proposition must, I think, be apparent to all.

Marshall v. *The Ulleswater Steam Navigation Company* (7 Q. B. 166) bears directly upon the extent of this right of navigation, and is the more important as dealing with non-tidal water. The case was briefly this: The plaintiff was the owner of the soil of the bed of Ulleswater Lake. A third party had leased land abutting on the shore of the lake to the defendants, and had constructed for the defendants a pier or landing-stage. The water of the lake was so shallow, that it was impossible for the steamboats to land or embark passengers or goods directly from the land leased by them of the third party, and he, to meet this difficulty, carried the pier out twenty-six feet further, on piles driven into the bed of the lake, and so interfered with the ground of the plaintiff, and committed a trespass in consequence of which the plaintiff acquired the right either to remove the part of the pier which was built upon his land, or to annex it to his property. He took the latter course, and then attempted to prohibit the defendants from using the pier, as having been built upon his land, and forming part of his private property. It was held that such an attempt was an interference with the public right of navigation, and that the defendants were entitled to use the pier as it stood for the purpose of gaining access to the land leased by them upon the shore. In delivering his judgment, Blackburn, J., said: "I apprehend that where there is a right of that kind (*i.e.*, navigation) the necessary incidents are involved in it, and therefore that, on a navigable river like the Thames, when

a person with his barge has to come to the land, it is not essential that he should find some spot where the water is so deep that the barge can float up to the bank close enough to enable him to step ashore, but that he has the reasonable and usual modes of disembarking incidental to the navigation of vessels." In another case, that of the *Mayor of Colchester* v. *Brooke* (7 Q.B. 373), Lord DENMAN, C. J., says: "If in navigable tidal rivers it was held that their character did not extend higher up than the water sufficed to float vessels at all times, or was suspended during such periods of the tide as left the channel too shallow for that purpose, rights of the public invaluable and immemorial in numerous rivers would be abridged and rendered in many cases vexatiously uncertain, and in many cases be made nearly, if not entirely, useless. To say, then, that the river ceased to be navigable, ceased to be a highway, at the ebb or other states of the tide when such vessels could not float, is in effect to say, that except for a short period in every month, they should not use the river at all for the purpose of trading with Colchester. It is more reasonable to hold that the term navigable is a relative and comprehensive term, containing within it all such rights upon the waterway as, with relation to the circumstances, are necessary for the full and convenient passage of vessels and boats along the channel."

Another common right (coming next after that of navigation and subservient to it), which is *prima facie* vested in all the subjects of the realm, is the right of fishing in the sea and upon the shore. This is, of course, subject to the bounds set by statute law as regards particular kinds of fish and the seasons for catching the same, and the manner in which the public right of fishing may be exercised, and the nets which it is lawful to use. Shell-fish may be taken on the shore, but shells, being regarded as a product of the

shore, and, as such, coming under the definition of a *profit-à-prendre*, may not be taken.

In early times (prior to Magna Charta) it was not unusual to grant a several fishery along with a sea-coast manor, and several such instances are on record. But this power of exclusion is no longer possessed by the Crown, and a right to a several fishery can only now be established by express grant from the Crown before Magna Charta, or by prescription giving rise to the presumption of a grant of that date. In establishing such a claim it will be necessary to prove that its existence was both possible and reasonable at that period. If a several fishery is claimed upon a certain portion of the coast, it will be evidence to show that such a right could not have been exercised or claimed prior to Magna Charta, and will be sufficient to defeat the claim.

It is well to note that this right of several fishery is independent of the ownership of the foreshore, and that the grant thereof, as of the other usufructuary rights and privileges of the foreshore, does not necessarily convey the title to the shore itself. Nor does the ownership of the foreshore carry the fishery along with it.

We now have to consider the question of wreck of the sea, including flotsam, jetsam, and ligan. It may not be wholly superfluous to explain that the term flotsam is used in cases where the ship sinks and the goods float; jetsam, when the goods are thrown overboard to lighten the ship, and the ship perishes; and ligan, for heavy goods cast into the sea and buoyed up by corks. (5 Coke, 106.)

It is a common idea that all goods cast upon the shore by the sea may be regarded as wreck, and treated as such, but, legally, the term is far more exclusive. To begin with, the goods must have been to sea in a ship; the ship must perish, and no human being or domestic animal escape therefrom alive (a condition, by the way, often ruthlessly

fulfilled in times past); and they must have been actually wrecked, that is, cast upon the shore; for, according to the statute 3 & 4 Wm. IV., c. 52, s. 50, goods landed from a ship which was abandoned and driven on shore are not wreck of the sea, and therefore not liable to salvage.

The right to all wreck of the sea is part of the prerogative of the Crown, and belongs to the Sovereign as such, distinct from any ownership in the soil, by virtue of his office of Lord High Admiral. This usufructuary right may of course be vested in a subject by grant or prescription, and has frequently been conveyed along with grants of sea-coast manors.

In order further to protect the rights of ownership it was enacted (1 Henry IV., c. 16) that not only must no life be saved and no means remain whereby the property can be identified, but the goods must be cast by the sea upon the soil, although it is not necessary that they shall be left dry. Flotsam, jetsam, and ligan only pass as wreck when the ship perishes or the owner is not known, and according to 46 Edw. III., c. 15, goods cast into the sea for fear of tempest are only forfeited if the ship be lost.

In cases where life has been saved from the wreck, the goods cast on shore are to be kept for a year and a day (unless they be perishable and so need to be sold sooner to prevent loss), during which time the owner can claim them from the person (sheriff, coroner, or bailiff) in whose custody they are; if he fails to do so they are to be delivered to the Crown or its grantees.

The right to royal fish—whale, sturgeon, and porpoise—is another prerogative of the Crown, which may be conveyed to the subject in the same manner as wreck of the sea.

With regard to seaweed, shells, and sand, these, being the natural products of the shore, belong to the owner of the soil. It is an error, but a common one, to suppose that the

public have a right to take them, as such would amount to a *profit-à-prendre* from the property of another. When, however, the soil of the foreshore is vested in the Crown, the public have been permitted to exercise the privileges, when no public rights have thereby been injured.

The right to take seaweed is in some parts of the realm a valuable property, notably so in the Channel Islands, where, under the Norman law, special provision has been made for it. It is regarded as a public right, and certain days are appointed for cutting the vraic growing on the low rocks, which are exposed when the tide is low. In a case arising from this custom it was held on appeal that no lord of a manor could claim an exclusive right to cut seaweed below low-water mark, save by grant or prescription (*Benest* v. *Pipon*, 1 Knapp P. C. 60). The seaweed thus collected is held in great esteem by the islanders for agricultural purposes; and it is worthy of note that in Jersey each of the twelve parishes into which the island is divided, including such inland parishes as St. Peter's and St. Saviour's, are provided with special access to the coast for the purpose of gathering the seaweed thrown upon the shore by extraordinary tides. In England, seaweed thrown upon the land above high-water mark belongs to the owner of the land on which it has been cast.

In attempting to establish a right to take sand and shingle from the foreshore it must be borne in mind that (independently of the public right of navigation to which it must always be subservient) custom cannot be adduced in support of a right to a *profit-à-prendre* in the soil of another, and that therefore such claims can only be made good by grant or prescription.

I have now come to the end of my remarks concerning foreshore. They have been necessarily brief, for the time at my disposal has not permitted me to enter as fully into the

subject as I could have wished; but I think I have been able to tell you what foreshore is, what position it holds in law, and what are the chief rights, privileges, and obligations connected with it. Finally, I may remind my hearers that there are large tracts of foreshore in which the ownership is still doubtful, and which therefore remain to a certain extent debatable ground.

Mr. J. W. Dale (Fellow) proposed a vote of thanks to Mr. Hans Hamilton, on behalf of the Members, and begged to compliment him on the able Paper he had just read.

His remarks would be, necessarily, brief, because the subject had been dealt with so exhaustively by the author, and because any critical examination of the Paper, to be really critical, should come from a purely legal mind. There was just one point, however, which did not appear to have been touched upon in the Paper, and which, as it was of some practical importance, he might be permitted to remark upon—the fact that the rights of the Crown with respect to the foreshore were now vested in the Board of Trade. By the Crown Lands Act of 1866, section 7, it was provided that "The rights of the Crown in the shore and bed of the "sea, and every channel, creek, bay, estuary, and every "navigable river in the United Kingdom, so far as the state "of the tide shall flow, and which are hereinafter, for the "sake of brevity, called 'the foreshore,' are, subject to the "provisions of Acts and existing public rights, transferred "from the management of the Commissioners of Woods "and Forests to the management of the Board of Trade."

The duties of the Board of Trade with respect to the foreshore, as defined by that Act, were to protect the rights of the Crown, and to ascertain at what parts of the coast the Crown had parted with those rights, and in what parts they were indispensable, to prevent encroachments on the

foreshore, and to protect navigation and other public interests, and to sell, lease, or license the use of, and to deal with, the soil as they considered necessary.

The fact that the exercise of the prerogative and the duty of the Crown to see to the repairing of banks against the sea was vested in the Commissioners of Sewers was mentioned in the Paper, but he did not gather that the writer intended to suggest that the duty of the Commissioners of Sewers went beyond the repairing of banks and the erecting of new defences against the sea and tides; and he therefore thought it useful to mention the duties of the Board of Trade, which he apprehended were general except as to certain duties in certain localities, such as those relating to harbours, which were thrown on particular corporate bodies, as mentioned in the Paper.

He confessed he was unable to understand the reasoning in the case of *Marshall* v. *The Ulleswater Steam Navigation Company*, as quoted in the Paper. The driving of piles into the bed of the lake appeared to him to be a substantial trespass, and to have been done for the purpose of facilitating the approach of another and a larger character of vessels than those which had been used previously. To his mind the reasoning was somewhat strained. The case of barges on the Thames was not exactly analogous, but, taking such a case as an illustration, surely one would think that there was some limitation to the right of barge-owners to throw out their piers on the property of other people.

The principle raised in the Ulleswater case was not generally known or recognised, and certainly was not generally acted upon. He ventured to think that there were many Members of the Institution who could give instances from their experience where payments had been made in similar cases to the owners of the bed of the lake or the foreshore. He might mention that in an old lease of foreshore land he

had found that the lessor claimed the right to divert the bed of the river running along the foreshore, in order to obtain a better access to his ferry. He might also mention the instance of the gangway at the mouth of the River Conway, where the London and North Western Railway were at the present moment erecting a pier for the purpose of discharging slates, and had had to obtain permission to do so from the Crown, through the Board of Trade.

Again, a curious point of law arose with regard to oyster-beds, which were generally laid upon the foreshore by the sanction of the owner. He would like to know, the public or the adjacent owner having the right to throw out a pier and to put in piles for that purpose upon the oyster-beds, whether there would not be a cause of action and a liability for damages.

Mr. H. H. Collins (Fellow) having seconded the vote of thanks,

Mr. G. M. Freeman (Associate) said that the Paper did not lend itself very readily to discussion, as it had dealt so fully with all the points bearing directly or collaterally on the law as to rights of foreshore; consequently the few remarks he had to make would be of a somewhat desultory character.

In the early part of the Paper the writer spoke of the rights of lords of the manor and of the Crown in the foreshore being generally difficult to determine, and very often of exceedingly ancient date, frequently giving rise to enormous difficulties in cases of great public importance. When, for instance, it was desired to carry out works for the prevention of inundations, for training walls, or anything of the kind involving interference with the foreshore, the difficulties which resulted, and the expensive and unnecessary fights which took place before Parliamentary Committees, in consequence of

inability to determine the exact rights of lords of the manors, or of the Crown—represented very often by some other body such as the Duchy of Lancaster, and rights of various other parties claiming interest in it,—frequently prevented the carrying out of improvements which were necessary for their protection and extension where they had large waterways or were affected by the sea. It was much to be regretted that this uncertainty prevailed as to the rights of the various bodies in the foreshore, and it was to be hoped that some means would be found by Parliament to simplify questions of the kind.

He remembered a matter which two years ago caused the very gravest difficulty to the town of Preston-on-the-Ribble, where the town claimed rights, the lords of the manors claimed rights, and each claimed rights against the other. The result was that a fight of great length took place, and, in the end, something like £12,000 had to be paid twice over, because the difficulty of finding out who the foreshore really belonged to was so great that the town of Preston, before facing the enormous expenditure it was about to incur, determined to be rid, once and for all, of these doubts, by paying whoever put in a claim to them. Such a state of things was deplorable, and called urgently for a remedy.

The Paper contained some interesting remarks with reference to the duty put upon the Crown (and which had always existed on the Crown as correlative to the benefits which it derived from the foreshore) of protecting, so far as possible, various parts of the country against the encroachments of the sea. Here, again, there was an opening for what might be a real reform. The protection of the coast was entrusted to a great number of different bodies, General Commissioners, and Commissioners having their own sets of rules and their own sets of requirements, the carrying out of

which depended upon the zeal, knowledge, and ability of the gentleman who acted, from time to time, as their Surveyor. The result was—as was experienced only last year in certain parts of the Welsh coast—that the requirements of one place, although quite sufficient for its own needs, were not sufficient to meet the requirements of an adjoining place, which, nevertheless, was liable to, and was affected by, the invasions of the sea over its neighbour's land. This was a matter which might, according to the spirit which was now pervading legislation, be more unified and brought into a single compass. For the 40 or 50, or, for aught he knew, 500 bodies of Commissioners, controlling separate areas under the terms of ancient Charters or Acts of Parliament, a single competent and responsible authority should be substituted, charged with the duty of protecting the coasts from invasions of the sea.

The author had referred to the case of *The Nitro-Phosphate Company* v. *London Docks*. Curiously enough, within the last six months, precisely the same case had again to be tried, with a still stronger set of circumstances, showing the danger to which people owning this sort of property were exposed. The whole of the land round the London and St. Katherine Docks, lying at a level very much below the Thames, had been put under the control of the Dagenham Commissioners. A little while since, the Dagenham Commissioners gave orders to raise the walls to a certain height, and they were accordingly raised in every case except one. A very high tide took place, out of all proportion to any that had gone before it, and the water poured through the London and St. Katherine Docks and the Victoria Graving Dock, and even over various other points where the walls had actually been raised to the height required by the Dagenham Commissioners; but the Victoria Graving Dock walls not having been raised in one or two instances to quite the pre-

scribed height, the whole of the damage by the flooding was thrown upon that dock, notwithstanding the fact that other parts which had complied with the requirements of the Commissioners had contributed to bringing in the water. Thus the whole of the responsibility, by one small error, fell upon one body, because the Commissioners had not been able to calculate and foresee the height of wall which would be required. They were acting up to the best of their abilities; but it was another proof of the need of bringing together and centring in one body the knowledge collected in various parts of the country, and thus decreasing the chance of a recurrence of the evils referred to.

There was another point upon which he desired to say a few words. During the last few years great efforts had been made to extend the protective rights exercised by the Crown over the actual shore of the sea as far as possible along the navigable portion of the River Thames. As was known to many Members present, this had been done with the very greatest success, and it showed the good which ensued from unity of action. Taking the River Thames, with a frontage of about forty-five miles, the Metropolitan Board had been able, by consultation with the riparian owners, to secure so completely the whole of that great frontage from the severe and grievous floods to which it was previously exposed, that last week there occurred the first claim to compensation made against the Board in respect to the whole of the works along that great stretch of river.

With regard to the case of *Marshall* v. *The Ulleswater Steam Navigation Company*, to which reference had been made, he was afraid that a frontager, especially on the River Thames, who had a bit of bank and took it into his head to run out a jetty 30 or 40 feet in length, would find that the Ulleswater case would hardly carry him through. The Thames Conservancy, for instance, might have something to

say to him. He knew very few cases where the soil of a navigable river was not vested in some public body, who would have a great deal to say to anybody who ran out a pier of the kind. The real explanation of the Ulleswater case was, he thought, rather different from that put forward in the Paper. In that case the owner of the shore lay by and allowed the whole of the works to be completed, the ships to be built and brought there, and the traffic to be begun, when he calmly said, "Now, as you have encroached on my land, I am going to appropriate your pier," and proceeded to annex it for his own private purposes; whereupon the court said, "No, you cannot do this; the pier is necessary to the trading in ships which you have allowed to come on the canal, and it would be an injustice if you were allowed, after all this time, to turn round and appropriate it to your own use." He mentioned this, as it was important to prevent erroneous expressions from going forth with the authority of the Institution.

Mr. R. F. Grantham (Associate) wished to bear his testimony to the value of the information laid before the Institution by Mr. Hamilton, and would like to add a few remarks upon some practical points in connection with the subject.

Some years ago his father was engaged by the Board of Trade to make valuations of certain lands and islands about to be reclaimed from Handford Water, on the coast of Essex. The direction of the Board of Trade was that all land below the level of high water of medium or average tides was to be valued, which they interpreted to mean the level of mean high water of spring-tides and of neap-tides. The surface was partly covered by vegetation common to such lands, and partly by bare mud. The part covered by vegetation was taken to be above the

mean high-water level, and the part with the mud upon it—the slob-land—was taken to be below it. The area of the slob-land was taken out, and a value put upon it, and the average value of four cases amounted to £1 0*s.* 10*d.* per acre.

In passing, he might remark, with reference to the level at which land was fit to be reclaimed, that he had found by observation in Canvey Island in the River Thames, in land adjacent to the River Nene outfall, and in the surface of Morecambe Bay, that the level was very nearly 11·33 feet above ordnance datum. Below that level it was not ready to be enclosed, and there could be no greater mistake than to enclose land before it was ripe.

In August last there was a case, which Mr. Hamilton was no doubt aware of, which was heard before the Lord Chief Justice upon the question of foreshore rights. That case related to a piece of land near Lowestoft which had been under process of accretion for the last 40 years, and it was desired to make a dock there. The question was whether the land belonged to the private adjacent owner or to the Crown. The principles which Mr. Hamilton had laid down as to the imperceptible progress of the accretion applied in this case, and the Lord Chief Justice, in delivering judgment, decided in accordance with what Mr. Hamilton had said. He laid it down as law that where the progress of the accretion was so imperceptible that no marks could be pointed out up to which the sea had flowed, then the land belonged to the adjacent owner; but if the progress of the accretion had been perceptible, and marks could be pointed out up to which the sea had flowed and formerly covered the land so accreted, then the Crown were entitled to the land. In that case, evidence was given by pilots and others who could point to certain marks which they had observed during past years where the sea had flowed, and therefore judgment was given in favour of the Crown.

He had recently had occasion to visit Morecambe Bay, about the reclamation of a part of which Mr. Hyde Clarke read a Paper at the Society of Arts in 1884. There were certain rights over Morecambe Bay, and one of them was the right of cockling, which had the peculiar condition attached to it, that the cockles, in order to live, must have salt water over them twice in every twenty-four hours. Mr. Walduck embarked in a reclamation scheme, and commenced an embankment from a certain point in the bay, running his bank about a mile out to sea, with the result that the land in the surface of the bay collected and warped up to a considerable extent, both in height and area, thus driving the cockling trade some distance out, because the sea could no longer cover the cockles, which formerly lay nearer the shore. Another right in Morecambe Bay was one which Mr. Hamilton had mentioned in his Paper, namely, that of digging sand, which was common to the owners and occupiers of the various townships which front on the bay. The township of Warton-cum-Lyndeth was one of those townships, and before Mr. Walduck could commence his operations he had to settle with that township, which claimed 10,000 acres over the surface of the bay, and he paid for that right £6,300, or at the rate of 12*s.* 7*d.* per acre.

He ventured to make these remarks not by way of elucidating points of law, but rather as illustrating the principles enunciated by Mr. Hamilton in his Paper, and to show what value had been assigned to some rights, and what effect some engineering operations might have in interfering with them.

Mr. W. Topley (Visitor) said his interest in this matter arose from the fact that, as an officer of the Geological Survey, it had been his duty to survey a good part of the

south-eastern and Northumberland coasts, and, in doing so, to collect a great deal of information regarding the movements of shingle and the alteration of the coast-line; and still more as one of the secretaries of the British Association Committee, appointed to investigate this special subject, of which Committee Mr. R. B. Grantham was chairman.

The first point that occurred to him, upon which he should like to have a little more information, was as to the limits of the foreshore. It had been stated that the limit was the ordinary line of ordinary tides. That, of course, as all engineers knew, was a line that, practically, did not exist. The line of ordinary spring-tides could be marked; the line of neap-tides could be fairly ascertained, and also the line of mean sea-level or the Ordnance datum; but such a line as that of the ordinary tide was not determinable. The spring-tide reaches its maximum once a fortnight, and with each tide got lower and lower, until the neap-tide was reached. It was stated in the Paper that this matter had been already decided; but he would like to ask Mr. Hamilton whether the decision referred to had not been actually reversed, or, at any rate, seriously called in question.

Then, with regard to land gained from the sea. It was very clearly stated that land gradually gained was the property of the owner or of the Crown, as the case may be; but what happened in the case of shingle, which could not always be said to be suddenly gained, and yet very often it was possible to trace the way in which it accreted? It could, for instance, be shown that certain tides threw up certain shingle. To whom did that shingle belong? He believed, as a matter of practice, if not as a matter of legal right, it was taken to belong to the lord of the manor or to the Crown. It would be at once apparent that there were many questions which turned upon that point.

Then, as to the right which people had of extracting

material from the shore. Engineers knew that it was a very common practice all along the coast for the owner and others to cart away the shingle from their own shore. Had they a right to do that? A still more important question was, to what extent had they a right to stop the travelling of the shingle. This was really one of the main questions at issue. To what extent had owners the right to set up groins and other obstructions of the kind to stop the shingle, which would otherwise travel along the shore and contribute to the protection of neighbouring land? The case of running water might be taken as analogous; no one had a right to stop running water and appropriate it to his own use. Very few, perhaps, who had not specially investigated the subject as it had been his duty to do, knew the enormous extent to which this kind of thing was going on all along the coast, especially the south-eastern and eastern coast. Indeed, it was a matter of almost national importance; and he agreed with Mr. Freeman that one outcome of the discussion of this question should be the thorough investigation of all these matters, and the placing them under some special department.

He might perhaps be allowed to place at the service of the Institution some of the preliminary Reports of the Committee of the British Association to which he had referred. In a week or two there would be published a very long Report, copies of which he would be happy to forward for the Library and to Members of the Institution interested in this matter.

A form of questions had been prepared, copies of which he would send to anyone disposed to assist the Committee in this inquiry.

Mr. J. E. Bankes (Associate) remarked that the writer of the Paper had treated this question as though it occu-

pied debateable ground. He could only say that he did not agree with that view, for it seemed to him that there was hardly any branch of the law which was founded on clearer principles, or was more firmly settled.

This question had been one of immense importance from the very earliest periods of history. Consequently one might expect to find the law with regard to it fully settled, and this, he ventured to think, was really the case. So far as he understood it, the law depended upon the old feudal idea that all the soil of England belonged to the Crown, including, therefore, such portion of the soil as was occasionally covered by the sea. That portion of the soil was commonly known as foreshore, which of course belonged to the Crown with all the rest of the soil of this country. That being so, the rights of the Crown over the foreshore still remained, except in cases where it could be shown that the Crown had granted them away in the same manner as it granted away other portions of the soil.

It was true that, in a certain sense, debateable points arose in connection with foreshore questions, but they were questions of evidence rather than of law, because it was extremely difficult to find evidence which was available in matters of the kind; for it might be necessary, in case of a disputed ownership of foreshore, to go back to the earliest times, and it was very difficult to appreciate the true effect of acts of ownership, or supposed acts of ownership, exercised under very old Charters, or which may have occurred very many years ago.

The author had enumerated three ways in which a person might make good his title to foreshore: "(1) By proving an express grant from the Crown; (2) By proving a manifest intendment conveyed by the terms of the grant; (3) By proving prescription or immemorial usage presuming a grant." The two first heads really amounted to the same

thing. To prove "a manifest intendment conveyed by the terms of the grant" was the same as proving "an express grant from the Crown." The more logical arrangement of the ways in which a person might prove title would be either by express grant (whether it was clear or not made no difference; it was an express grant or no grant at all) or by prescription. Apart, therefore, from the difficulty of obtaining evidence, and the fact that the foreshore in many places had been property which had not been in ancient times very carefully looked after, the law was perfectly clear.

With regard to the Ulleswater case, referred to in the Paper, although he was not acquainted with it, he could not help thinking that there was a mistake somewhere. He might even go further than Mr. Freeman in criticising that part of the Paper. It had been suggested that, according to the Ulleswater case, any man who had a little piece of foreshore in the Thames might run out a pier and allow vessels to come up to it without asking anybody's consent; but the Ulleswater case, as cited in the Paper, went further than this, because, in the former case, the man would at least be on his own land, whereas, in the reported case, the pier was on somebody else's land. He could not conceive that to be good law, and he believed that if the case were more fully noted it would be found that there had been something such as Mr. Freeman had suggested—viz., that the owner had lain by and allowed what was going on without interference. So far from a person being allowed to place a pier on another man's land in order to enable him to land, he very much doubted whether a man who was navigating a navigable river had a right in all cases to land upon its banks. He had recently met with a case upon this point which arose in a very curious way. The definition in the statute of a "*bonâ-fide* traveller"

Paper 136
No. 231

LONDON REMODELLED.

By WM. WOODWARD (Professional Associate).

Read at the Ordinary General Meeting of The Surveyors' Institution, *Monday, February 22nd*, 1886.

MR. E. P. SQUAREY (VICE-PRESIDENT) IN THE CHAIR.

In November last I read before the Royal Institute of British Architects a Paper entitled "London as it is, and as it might be." In that Paper I confined myself principally to the administration of the Metropolis, its defects, and the manner in which improvement could be effected.

In the Paper and drawings which I have prepared for The Surveyors' Institution, I have indicated the new streets, widenings, and other works which are, in my opinion, necessary to make the Metropolis what it should become—viz., a grand, convenient, and healthy city, worthy of the richest country in the world. In bringing the subject before you this evening I have not disguised from myself that it embraces many serious considerations, requiring the combined and careful study of the statesman, the architect, the surveyor, the engineer, and the lawyer; neither am I unmindful that a glance at the large plan exhibited may evoke exclamations of surprise at the boldness of both proposition and proposer.

It was one of Disraeli's favourite ideas that London ought to be the most magnificent city in the world—a model for all other cities; and when some one objected to his regenerated London, that his plan would cost £200,000,000, and convert every ratepayer into a porcupine, he answered

"We may have to pay £500,000,000 in the end for doing "things in the present way, and as to the porcupine, "he is manageable enough if you handle him in the right "way."

When NAPOLEON THE THIRD commenced the re-edification of Paris he said, "Is it not pitiful that the Emperor "should be doing by force what we could do so much better "of our own free will if we had a proper pride, to say "nothing of proper sense, in the matter?"

VOLTAIRE, in his celebrated article entitled "Des Embellissements de Paris" written in the middle of the eighteenth century, said with reference to Paris—"We "possess the wherewithal to purchase kingdoms; we see "every day what is wanting to our capital, and we content "ourselves with murmuring. . . . We rush to the theatres "and are indignant on entering them in a manner so "inconvenient and so disgusting, to be so uncomfortably seated "there, and to leave them with more trouble and confusion "than when we entered. We blush, rightly, to behold public "markets established in narrow streets, spreading dirt and "infection. We have only two fountains in good taste, and "they are far from being advantageously situated; all the "others are worthy of a village. Immense districts require "open spaces, and the centre of the town, obscure, confined, "hideous, represents a period of the most shameful barbarism. "We say this without ceasing, but until when shall we say "it without remedying it? The meanness of ideas, the "fear, still more mean, of a necessary expenditure, rise up "to contend with those projects of grandeur which every "good citizen has made to himself a hundred times. We "are discouraged on thinking what it will cost to raise these "necessary monuments, the greater number of which, "becoming every day indispensable, must be executed in the "end whatever they may cost; though, in the main, it is

"very certain that they will cost nothing to the State. . . .
"What! shall it be only at the last extremity that we do
"something great? If half Paris were burnt down we
"should rebuild it, rendering it superb and commodious;
"and we are not willing to give it, to-day, at a thousand
"times less cost, the accommodation and magnificence which
"it needs! Yet a similar enterprise would redound to the
"glory of the nation, would be an immortal honour to the
"Municipality, would encourage all the arts, and, far from
"impoverishing, would enrich the State. It would, moreover,
"accustom to work a thousand worthless loafers who sustain
"a miserable life in the infamous trade of begging, and
"who still contribute to dishonor our capital."

It is regrettable to be compelled at times to disparage this great city of ours, and to institute, to its detriment, comparisons between it and the leading continental cities, but it is impossible to deny that VOLTAIRE's eloquent lament might, in great part, be applied to London at the present moment. I quite agree (indeed, the following table of death-rates will show) that London compares well with other cities in its health statistics, a fact still more encouraging when we remember that it also contains a population considerably greater than that of any of the cities mentioned.

According to the "Annual Summary" published by the authority of the Registrar-General of Births, Deaths, and Marriages in England, the death-rate per 1,000 in 1884 in the cities mentioned was as follows:—

St. Petersburg - - -	31·9
Rome - - - - -	27·4
Venice - - - - -	26·8
Berlin - - - - -	26·4
Vienna - - - - -	26·3
New York - - -	25·9
Paris - - - - -	25·6

Brussels - - - -	23·8
Inner London - - -	20·3
Greater London - - -	19·7

I may add that in Madras the rate was 50·7, the highest in the table given. Brighton stands at 18·48 per 1,000, corrected death-rate; and I see no reason why London should not be brought as low, if not lower, than that town.

In addition to the comforting assurance of this table, we know that London possesses all the necessary advantages as regards position, accessories, extent, and wealth to make it a city such as the world never saw; but to secure this *now*, to give the dwellers healthy open spaces, to open up grand thoroughfares, widen and continue existing streets, afford proper provision for public buildings and for dwellings for the inhabitants—in short, to make London safe, healthy, commodious, and elegant—will require a demolition and clearance which it is impossible to contemplate lightly. But, that this grand conception is practicable; that with vigour and energy it can be accomplished, will, I trust, be proved by the fact that, in much less time than I propose for the completion of the improvements suggested in this Paper, Paris was remodelled and became the city that it is. As I shall show later on, no such debt as that which burdens Paris should occur in London—a debt the extent of which might reasonably deter the authorities from in any way considering large projects for improving this metropolis. There will, of course, be persons ready to declare that any large scheme for improving London is entirely utopian; that it has got along very well as it is, and only needs to be let alone. The old cry of interference with private property will be raised, and the result may be, as in the case of the rebuilding of the City after the Great Fire, that permanent good may be postponed to present inconvenience, in utter forgetfulness of the fact that the increase of popu-

lation, if it goes on in its present ratio, must shortly render obligatory what might now be done with quiet fairness and just compensation for disturbance, and that every year the difficulty of adequate provision for the disturbed is increased. It cannot be too strongly urged that a beautiful city attracts the world, adds to its commerce, and thereby to the wealth of its inhabitants, and thus returns a portion of the expenditure on its magnificence, apart from the one grand aim and object which should be dearest to the heart of every citizen—the lowering of the death-rate.

We may proceed, then, to set out the attributes of a magnificent city, such as London might become, if only concerted, skilful, and far-seeing action took the place of scattered, blundering, and short-sighted attempts to deal with the biggest city in the world in a manner commensurate only with the district of a self-constituted vestry.

There are four essentials for a city :—

1. Entrances ;
2. Streets ;
3. Squares and Open Spaces;
4. Edifices.

Entrances to the City proper should be by boulevards, traversing the whole of the suburban districts of the Metropolis, bringing the latter into communication with each other and with the Metropolis. With the boulevards should be connected, by fine avenues, all the parks, in the interest of the health and enjoyment of the people. Beyond these boulevards, and only beyond them, should be the factories for offensive trades, slaughterhouses, cemeteries, hospitals, infirmaries, workhouses, prisons, &c. Establishments should exist in the City proper for the reception of urgent cases of illness or accident, but, beyond the boulevards should be the buildings for the treatment of chronic, or what are likely to be prolonged cases. Proof of the folly of the

present system can be found any day by an inspection of the new infirmary in the Fulham Road, the new St. Pancras Workhouse, and other similar buildings, where in the centres of ever-thickening populations buildings have been planted with their frontage directly next the footways of busy localities, to the detriment of the quietude of the inmates, and the peace of mind of the passers-by.

Streets may be termed natural veins and arteries, and their width, shape, and disposition have an immense effect upon the health of the community. Position, proper width, easy gradients, safe and even paving, adequate channels and gullies, are the essentials; picturesque curve and turn, good architecture properly proportioned to the several widths of the streets, with fountains, obelisks, columns, and statues, at their ends, the embellishments of a well-ordered city. Extreme uniformity is no doubt a radical fault in any city; contrast and even some disorder produce beauty and elegance; long lines of straight streets with unbroken cornices and skylines in the buildings are to be deprecated. Whilst proper proportions as regards height of buildings to width of thoroughfare should be maintained, individual freedom of architectural treatment should be permitted, to produce picturesque divergence of detail, not, however, at the expense of pleasing mass and satisfactory line. Gentle curves, circuses, and cuttings of oblique lines in the streets, add to the beauty of the *tout ensemble*. The High Street, Oxford—probably the finest street in the world,—is a notable example of this. Architectural variety is there sufficient to please its strictest votary, but it is a variety resulting in harmony; the surprise which meets one at every turn and curve of its stretch of unrivalled grouping produces a sensation of delight which is not equalled by the grandest street or boulevard with which Paris has yet been endowed.

The following are a few of the general principles I have

had in view in preparing my plan of proposed street improvements:—

1. Main streets traversing London from east to west, north to south, direct, intersected at principal points by circuses, diversified at intervals by gentle curves.

2. Subsidiary streets within easy distance of main streets, parallel thereto, to relieve traffic on main streets, particularly when converging towards Central London.

3. Diagonal streets branching from main and subsidiary streets, their lines of return on the diagonal, giving fair glimpses of their architecture.

4. Retention of old streets when of sufficient width, but with new approaches to them from main central streets.

5. Retention of old buildings and monuments of historical, archæological, and architectural interest.

6. Main streets to railway stations.

7. Main streets to bridges.

8. Opening up of parks.

9. Opening up and isolation of theatres.

10. Opening up and isolation of churches.

11. Formation of quays, 100 feet wide, on each bank of the Thames, with planted walks, fountains, statues, &c.

12. Arcades, and glass and iron covered ways for trade and locomotion in wet weather.

13. Subways for relief of traffic on footways in crowded thoroughfares.

As regards width of roads, the greatest might be 120 feet, building to building. This width is ample for all practical purposes, and would enable, without deterioration of effect, the erection of buildings sufficiently high for safety, convenience, and beauty. Subsidiary streets would vary from 100 feet down to 60 feet in width, according to position and requirements, but, except in out-of-the-way parts, where great traffic is not likely to go, none should be less than 60

feet, building to building. Portland Place has a total width of 126 feet, building to building, made up of open area on each side 10 feet, footway and curb on each side 17 feet, roadway and channels 72 feet. The Victoria Embankment is 100 feet wide, Northumberland Avenue 90 feet, building to building, the new Gray's Inn Road, as recently widened at its southern end, 60 feet—this latter width being excellent for ordinary traffic.

The Squares and Open Spaces of a city such as this are matters of great importance. From the accompanying table which I have prepared of the open spaces of Greater London, it will be seen that the total area is 15,351 acres, or one acre to every 339 persons, whilst Paris has one acre to every 13, Vienna one to every 100, Chicago one to every 200, New York one to every 1,363; but, in the Inner Ring of London, where the necessity for open spaces is greatest, there is only one acre of open space to every 1,021 persons—a state of things worse only in New York, where the authorities have proposed to buy 3,808 acres for a park, at an expenditure of 7,616,000 dollars, or 2,000 dollars per acre.

Of parks and other open spaces in what is termed *Greater London* the following are, approximately, the areas:—

	ACRES.
Hampstead Heath - -	240
Finsbury Park - - -	115
Stoke Newington Common -	5½
Victoria Park - - -	300
Regent's Park and Primrose Hill - - - -	450
St. James's Park - - -	83
The Green Park - - -	71
Hyde Park - - - -	400
Carried forward - -	1,664½

	ACRES.
Brought forward - -	1,664½
Kensington Gardens - -	300
Paddington Green - -	1
Battersea Park - - -	250
Southwark Park - - -	63
Kennington Park - - -	25
Thames Embankment Gardens	14
The London Squares - -	150
London Fields - - -	27
South Hackney Common -	5½
Hackney Downs - - -	50
Hackney Marshes - - -	345
Clapton Common - - -	9¼
North Mill Field - - -	29
South Mill Field - - -	28
Clapham Common - -	220
Wandsworth Common - -	183
Streatham Upper and Lower Commons - - -	66
Brook Green - - -	6
Eelbrook Common - -	12
Parson's Green - - -	3
Goose Green - - -	6½
Camberwell Green - -	2½
West Ham Park - - -	80
Peckham Rye - - -	64
Shepherd's Bush Common -	8
Bostall Heath - - -	55
Plumstead Common - -	100
Shoulder of Mutton Green -	4
Tooting Beck Common - -	144
Tooting Graveney Common -	63
Carried forward - -	3,978¼

	ACRES.
Brought forward - -	3,978¼
Barnes Common - - -	100
Well Street Common - -	30
Kew Gardens - - -	300
Richmond Park - - -	2,250
Bushey Park - - -	1,000
Wimbledon Common and Putney Heath - - -	1,000
Wormwood Scrubs - -	194
Blackheath - - - -	267
Nunhead Green - - -	1½
Epping Forest - - -	5,348
Wanstead Park - - -	182
Greenwich Park - - -	200
	14,851
Add, for areas not mentioned in the above list, say - -	500
Total of open spaces for Greater London - - - -	15,351

The Metropolis Management and Building Acts Amendment Act, 1882, provides for a certain quantity of open space to be left at the rear of all new buildings intended to be used wholly or in part as dwelling-houses, but, inasmuch as this applies only where the buildings are to be erected "upon a site not previously occupied in whole or in part by a building," the provision might, so far as London is concerned, just as well have been omitted from the Statute-book.

Squares and crescents, characteristic features of London building operations half a century or so ago, features which clearly show the forethought of their designers, and which have in many parts of London accounted for the low death-

rate, are conspicuous only by their absence in the more recent building operations in and around London ; and it would appear to have been reserved for the advanced intelligence of the latter part of the nineteenth century to use every means which the sacredness of private property and the laches of constituted authority permit, to cover every foot of available land for building, reserving only for open space just sufficient, and sometimes not that, to permit the due or partial lighting of the buildings erected. To expect to-day that a private landlord, the Metropolitan Board of Works, or a City Corporation, would give up so much per foot superficial of ground-rent, in order to provide ample and healthy breathing or recreation space for the dwellers in this vast city, is to betray a lamentable ignorance of their commercial instincts. One provision, therefore, should in my opinion be made the subject of an Act of Parliament, and that is, that in every building operation, great or small, the ground-landlord should be compelled to set apart a proportion of it under the direction of a State authority, at a reasonable price to be also determined by a State authority. The land so set aside should be used only as garden and recreation ground, theoretically for the good only of the purchaser or lessee, but practically, by reason of secured open space, for the good of the whole community. It has been proposed that corporate bodies should be specially subject to such an Act, but I am inclined rather to make one law, and one law only, on the ground that whatever is legally held to-day should be subject to the same law whether the land is one or one thousand acres in area. The proportion to be given up at a reasonable price would be fixed by the State, and that proportion would, of course, be governed by circumstances of area and position. Open space has been frequently and needlessly sacrificed in the formation of our new streets, where, in many cases, it would have been easy to have set back the general line of frontage,

even when part only of a street has been dealt with, or rebuilding has been carried out. If at the time these portions in hand had been so set back, ultimately, as the leases fell in, the whole of the thoroughfare would have been widened, additional open space, and a fine street secured, without any great hardship on any individual: in fact, the increased value of buildings in so fine a thoroughfare would recoup the loss of the fringe of land so given up. This result, however, can only be attained when the State chooses to give due consideration to such important matters. If any one will take the trouble to look at the northern end of Chancery Lane, and see what the Honourable Society of Lincoln's Inn has been permitted to do, they will appreciate better my remarks as to lines of frontage. In dealing with Open Spaces, we are considering the subject as from a health point of view, and, following up the point, it may be well to devote a few minutes to this consideration as it affects the dwellers in this vast Metropolis.

Some interesting facts in connection with the influence of physical surroundings on mortality appear in the Supplement to the 45th Report of the Registrar-General. It is shown that, on the average, the agriculturists have a comparative mortality figure of 644, the shopkeepers of 877, and the tailors, hatters, printers, and bookbinders of 1,088, whilst chimney-sweeps stand at 1,519. Living in a vitiated atmosphere seriously affects, of course, the respiratory organs. The mortality from diseases of these organs and from phthisis, taken together, is 198 for the fishermen and 237 for the agriculturists; while for drapers and grocers it averages 357, and for tailors and printers 549. As drapers live in a more vitiated air than grocers, and printers than tailors, so the mortality in these several trades corresponds to the differences in each case. Arranging the various industries in the order of purity of air, the following are

the averages of deaths from phthisis and diseases of the respiratory organs:—Fishermen, 198; agriculturists, 237; grocers, 283; drapers, 430; tailors, 471; and printers, 627. So much for living in vitiated air, and subjection to injurious trades, which, to some extent, is, unhappily, almost unavoidable. But the lowering of the death-rate is the first duty of every Government, and to secure this the State must set up and make provision for those means of physical training believed to be necessary. Free public gymnasia, free public swimming-baths, and free open recreation and sports grounds must be provided, and encouragement by public exhibitions and prize-giving afforded. I am aware that to some small extent public free gymnasia exist in our parks, and that swimming-baths are to be found scattered over London; but the prices of admission are prohibitory to the many thousands most in need of them. Special public grounds for the physical training of all those who would avail themselves of the opportunity should be provided, and these might be separate from the general recreation-grounds of the parks. There need be no costly apparatus provided for the gymnasts, and the baths need only be simple large basins lightly roofed in.

The fourth item in the list of things which I have suggested as necessary to form a beautiful city is "Its Edifices."

The public edifices, churches, markets, &c., should be placed, of course, to suit the public convenience. There will always be a marked distinction between the houses of the nobility and those of the middle and working classes; but surely it is not necessary that the poorer classes should be relegated to any particular quarter of London! Why should not the east end of London, under a well-considered scheme of continuous reconstruction, come, in time, to be as handsome and healthy as the west, and again be inhabited,

as in former days, by persons of wealth and position dwelling among their poorer neighbours? The advantage of the working classes living near their employment is great, and the advantage of the poorer classes seeing more of their richer neighbours would be felt in an improvement in the moral tone of the former and a very desirable acquaintance personally with their workpeople and tenants in the latter; thus gradually leading to the universal cultivation of the arts of civilised life, and resulting in the moral, physical, and financial improvement of the whole country.

Before I proceed to describe the improvements which could, by degrees, be carried out in London, it will be interesting to consider some statistics which I have brought together from various sources, and which will give a tolerably good idea of the magnitude of the city we are dealing with. I must confess that I have had some difficulty, in defining the boundaries of London, to distinguish between London within the Registrar-General's Tables of Mortality, London within the limits of the Metropolis Local Management Act, London within the Metropolitan Police District, the Inner Ring of London, the Outer Ring of London, Greater London, and some other boundaries within which London appears to be included for various purposes. I am not at all sure that I understand it now; but I am sure that the demand for alteration in Local Government areas is equally necessary as regards the Metropolis.

The Metropolis Local Management Act, 1855, 18 and 19 Vic., cap. 120, defines "the Metropolis" as including the City of London, and the parishes and places mentioned in the Schedules A, B, and C to that Act, and further defines "the City of London" to include "all parts now within the jurisdiction of the Commissioners of Sewers for the City of London." These Schedules, A, B, C, take in the parishes and districts which perhaps it may be useful here to enumerate, so that,

at least, we may know what was meant by "The Metropolis" in 1855.

The Parishes are St. Marylebone; St. Pancras; Lambeth; St. George, Hanover Square; St. Mary, Islington; and St. Leonard, Shoreditch. Each of the foregoing sends two members to the Metropolitan Board.

Paddington; St. Matthew, Bethnal Green; St. Mary, Newington, Surrey; Camberwell; St. James', Westminster; St. James and John, Clerkenwell; Chelsea; St. Mary Abbotts', Kensington; St. Luke, Middlesex; St. George the Martyr, Southwark; Bermondsey; St. George-in-the-East; St. Martin-in-the-Fields; Hamlet of Mile End Old Town; Woolwich; Rotherhithe; and St. John, Hampstead. Each of the latter sends one member to the Metropolitan Board.

The Districts are Whitechapel, Westminster, Greenwich, Wandsworth, Hackney, St. Giles', Holborn, Strand, Fulham, Limehouse, Poplar, St. Saviour's, Plumstead with Lewisham, and Rotherhithe with St. Olave. Each of these districts sends one member to the Metropolitan Board.

I believe there are now a total of 23 Vestries and 15 District Boards, and, by a recent alteration, the number of members of the Metropolitan Board of Works, including the chairman, has been increased to 60.

The wants of the Metropolis, so defined, are administered by the Metropolitan Board of Works, the Corporation of the City of London, the Vestries, the District Boards, the Boards of Guardians, the Metropolitan Asylums Board, the School Board, the Police, the Thames Conservancy Board, the Lee Conservancy Board, the Gas Companies, and the Water Companies, besides, of course, the supreme controlling authority—the State. The total number of police, to guard not the Metropolis only, but Greater London, is 11,771 of men of all ranks—10,943 in the Metropolitan Police, and 828 in the City Police.

The annual expenditure by the Metropolitan Board is between £2,000,000 and £3,000,000; that of the Vestries and District Boards combined about £2,000,000; and that of the Corporation about £1,000,000.

The extreme points of the Metropolis, or the Inner Ring of London as it is called, are as follows. The most northerly point is Highgate Archway; the most southerly is Penge Road, about a mile and a half from the Crystal Palace; the most eastern on the north side of the Thames is at Bow Creek, and on the south side of the Thames at Plumstead Marsh, Crossness; the most western point is Chiswick Mall.

Greater London, or the Metropolitan and City Police Districts, includes not only the whole of Middlesex, but considerable districts in the adjacent counties, being comprised, roughly speaking, within 15 miles radius from Charing Cross.

The Outer Ring consists of Epsom (part of), Croydon, and part of Godstone, Kingston (part of), Richmond, Bromley (part of), Bexley, Staines, Uxbridge, Brentford, Hendon, Bushey, Barnet, and part of Hatfield, Edmonton, West Ham, part of Chigwell, and part of Romford.

The area of the Metropolis including tidal water is 78,052 acres, or 122 square miles; the area of Greater London including tidal water is 448,334 acres, or 701 square miles, 370,282 acres of which are in the Outer Ring.

The population of the Metropolis in 1876 was 3,489,428, or about 45 persons to an acre, whilst in 1885 it was 4,083,928, or 53 persons to an acre. There are nearly a quarter of a million more females than males in the Metropolis. The population of Greater London in 1876 was 4,211,647, whilst in 1885 it was 5,199,166, an increase of 987,519 in that period.

The population of the Metropolis resides at a mean elevation of 39 feet above Trinity high-water mark; the

elevation varying from 11 feet below high-water mark, in Plumstead Marshes, to 429 feet above high-water mark, in Hampstead.

In 1871 there were in Greater London 528,804 inhabited houses, whilst in 1885 there were over 685,000, an average of about 8 persons to each house.

In 1885 the rateable value of property in the Metropolis was £28,920,537. The rateable value of property in Greater London in 1881 was £32,854,916.

In 1876, a year of the quinquennial revaluation of the Metropolis, the valuation to the poor-rate was £22,763,087, and in 1881, the next quinquennial revaluation, the amount was £27,544,446, showing an increase of £4,781,359 in the 5 years. The valuation to the poor-rate which will come into force on April 5th, 1886, is £30,370,552, showing an increase of £2,826,106 in the 5 years.

The total length of roads, streets, courts, &c., in the Metropolis is about 1,896 miles. Of these 304 are paved with granite, 1,474 with flints or gravel and macadam, 26 with asphalte, 22 with wood, and 70 with flagging. The materials used for the maintenance and repair of roads in 1884 were, 208,019 tons of broken granite, 75,061 tons of broken flints, 55,372 tons of flagging, 42,970 tons of granite cubes, or a total of 371,422 tons of material. The first carriageway laid down by Mr. McAdam on his then new principle was in St. James's Square, in the year 1823; and my own opinion is that the best road-metalling for London, even in the year 1886, is that known as macadam. The annual cost of repairing the macadam roads when they existed in Parliament Street and Whitehall was about 2*s.* 10*d.* per yard superficial, and in Victoria Street about 2*s.* per yard superficial.

One of the busiest years in the building trade appears to have been the year 1881, in which 26,170 houses and 86

miles of new streets and squares were added to Greater London. In 1884 the number of new houses built was 18,428, and the length of new streets was 56 miles.

The number of persons who resort to the City within 16 hours is about half a million. About half a million pedestrians and 90,000 vehicles pass over the Metropolitan bridges daily, the number of pedestrians increasing at the rate of 4½ per cent. per annum, whilst the number of vehicles increases at the rate of 13 per cent. per annum.

The number of passengers conveyed by the Metropolitan and Metropolitan District Railways combined was, in the year 1876, 78,093,787; whilst in the year 1884 it was 104,484,699, an increase of 26,390,912; and it speaks well for the care and skill with which the Companies convey those passengers when it is added that during the period between 1876 and 1884 only 204 were injured, and only one killed. Between 1876 and 1884, 29,370 persons were maimed in London from street accidents, and 1,750 persons were killed from the same cause; in 1884 alone 265 persons were killed and 3,952 maimed, and surely it would not be too much to say that this startling number of deaths from street accidents is due to the crowded and congested condition in which many of the principal thoroughfares now are.

In 1878 there were in London 10,047 cabs, whilst in 1884 there were 19,905, an increase of 9,858.

In 1876 there were in London 568 omnibuses running daily, whilst in 1884 there were 710 belonging to the General Omnibus Company alone, and we know the great increase there has been in the omnibuses belonging to other Companies and private owners.

In 1876 the North Metropolitan Tramways Company alone ran 136 cars, whilst in 1884 they ran 273.

The main sewers, under the charge of the Metropolitan Board, are capable of intercepting 63,000,000 cubic feet

daily. The total length of these sewers is about 82 miles. The main drainage works have cost £4,607,000. The Vestries and District Boards, between 1856 and 1883 inclusive, constructed 1,081 miles of new sewers.

During the past year the average daily volume of water supplied to the Metropolis by the eight Water Companies is estimated at 152,273,210 gallons—76,776,956 from the Thames, 65,073,927 from the Lea, and 10,422,327 from deep wells in the chalk. The expenditure by the eight Water Companies up to December 31st, 1884, was £13,350,285. The daily supply of water during 1884, for all purposes, gives a consumption of 31·18 gallons per head of estimated population, and 234 gallons per house. The New River Company alone has about 782 miles of main pipes.

As I have already said, my purpose in troubling you with these statistics, is to show how vast and expansive are the conditions of the problem with which we are dealing: and as a consequence how pressing is the necessity for the abandonment of the hand-to-mouth system, and the adoption of some scheme sufficiently comprehensive to overtake the needs of the population, before those needs overwhelm us.

I now proceed to a

DESCRIPTION OF THE DRAWINGS, SHOWING THE MANNER IN WHICH LONDON MIGHT BE REMODELLED.

Drawing No. 1.

This plan shows, generally, the main features of the scheme, and although the new streets are cut through without any special regard to the various levels, these would, in the event of any of the new lines being carried out, be dealt with, where necessary, by the formation of tunnels or viaducts, which are capable of being treated as very beautiful

features of a city; the vaults beneath being utilised for warehouses and depôts. The skeleton ordnance map, upon which I have drawn the new lines, having been corrected down to the year 1851 only, there may be discrepancies in the detail of some of the parts. I have, however, corrected the plan as far as possible, and, for the purposes of my Paper, it may be considered sufficiently accurate. I have been able to indicate upon my plan the lines of most of the street improvements carried out or proposed by the Metropolitan Board of Works since its creation in 1855, and I will now proceed to briefly describe the new streets and improvements according to the black figures upon the plan.

1. New street from Hampstead Road, opposite Ampthill Square, into the Regent's Park, opposite Chester Road.

2. Continuation of Portland Place into the Regent's Park, in a line with the Broad Walk, which would be widened so as to form a drive through the Park into Albert Road, with rows of trees on each side, and walks for the public. This would make a fine and pleasant northern communication with the West End.

3. New street from Marylebone Road, diagonally through to the Park Road.

4. New street from the Midland Railway Station, diagonally through to Gray's Inn Road and Farringdon Road, with outlets into Cromer Street, which is widened on its northern side.

5. New street from Oxford Street to the British Museum; opening up also the entrance of the existing street from Oxford Street to Shoreditch.

6. Widening of the south side of Oxford Street, from High Street, St. Giles', to Holborn, near Great Turnstile.

7. New street from Holborn, in a line with Gray's Inn Road, to Fleet Street, and straight on to Blackfriars Bridge.

8. Continuation of the widening of Gray's Inn Road, northwards, to King's Cross.

9. Continuation of Bedford Row into Holborn, and thence to Lincoln's Inn Fields.

10. New street from Holborn, opposite Gray's Inn Road, through line of Great Queen Street, Long Acre, and Cranbourn Street, into Piccadilly, and the Quadrant, Regent Street, branching also into a new street running eastwards along the south side of Lincoln's Inn Fields.

11. New street from Holborn (at Little Queen Street) to the Strand, and on to Waterloo Bridge, and northwards, widening Southampton Row to form a north-western communication.

12. New street from the south end of Tottenham Court Road, at its junction with Oxford Street, to the Strand, and on to Waterloo Bridge.

13. New street from the same point as last to Trafalgar Square.

14. Opening up of Covent Garden Market by removing surroundings shown, and forming open spaces for carts and barrows.

15. Widening the south end of Bedford Street, Strand.

16. New street from Charing Cross, in a line with the Strand, through to the Mall, St. James's Park.

17. Widening Charing Cross to the present width of Whitehall at that point.

18. Widening north-west corner of Whitehall Yard, to continue new street into Whitehall Place.

19. Removal of block of buildings between Charles Street and Great George Street, west side of Whitehall.

20. New street from Westminster Abbey, north-east corner, to Millbank. Removal of St. Margaret's Church.

21. Widening of Cockspur Street, on its southern side.

22. Continuation of the Haymarket, southwards, by a new street into the Mall, St. James's Park.

23. Continuation of the Haymarket, northwards, by a new street into Oxford Street, and on to Great Titchfield street, forming another north-western communication.

24. Continuation of the Quadrant, Regent Street, into Coventry Street.

25. New drive along the eastern side of the Green Park from the Mall to Piccadilly.

26. Continuation of Pall Mall, westwards, by a new street into the proposed new drive along the Green Park.

27. Continuation of St. James's Street, southwards, by a new street into the Mall, St. James's Park.

28. New street from Berkeley Square into Piccadilly, to line with the proposed new drive along the Green Park.

29. Diagonal street, connecting Berkeley Square with Grosvenor Square.

30. Diagonal street from New Bond Street into Grafton Street, and thence to Berkeley Square.

31. New street from Piccadilly (at Down Street) into Great Stanhope Street, and taking up with South Audley Street.

32. Continuation of Great Stanhope Street into Charles Street, Berkeley Square.

33. Continuation of Park Street into Park Lane.

34. Widening of James Street, Little James Street, and Buckingham Row from Victoria Street to Buckingham Gate.

35. Widening and continuation of Artillery Row from Victoria Street into Rochester Row.

36. Widening of the Strand on both sides, and also Fleet Street, through to the new square of St. Paul's Cathedral.

37. Diagonal street from "The Angel," Islington, to

junction of Richmond Road with Caledonian Road, forming northern communication with Central London.

38. New street from the City Road, near Macclesfield Street, to Islington Green.

39. New street from near Beech Street, Barbican, to High Street, Shoreditch, and on to Bethnal Green Road, forming a continuation of the street from east to west of London.

40. Widening of Green Street, Esmond Road, and Roman Road, on both sides, further continuing the last-mentioned street.

41. New street from Bow Road, at Coburn Street, into Victoria Park.

42. Widening of Prospect Place, to width of Bishop's Road, into Victoria Park, in continuation of the Hackney Road.

43. New street from Commercial Road East, near Limehouse Basin, to Mile End Road, and on to Cambridge Road, forming another north and south communication.

44. New street from Whitechapel High Street, opposite Leman Street, into the Bethnal Green Road.

45. Widening of Leman Street, on both sides throughout its length.

46. Widening of Aldgate High Street, on its south side.

47. New street from Liverpool Street Station, Bishopsgate Street, to meet the Kingsland Road, forming another northern communication.

48. New quay from Blackfriars Bridge on the north side of the Thames, continued eastwards to the east side of the Thames.

49. New quay from Westminster Bridge on the south side of the Thames, continued eastwards to the west side of the Thames.

The portion of this plan, coloured a surface pink, is a district which it is not possible to thoroughly improve to

meet the enormous strain upon it, without involving the gradual demolition of the greater part of it. The streets, buildings, &c., which would, however, be retained at this portion of London are as follows:—

New Bridge Street;
Farringdon Road;
Holborn Viaduct, and its belongings;
Charterhouse Street;
St. Bartholomew's Church;
St. Martin's-le-Grand;
Cannon Street;
Queen Victoria Street;
King William Street;
Moorgate Street;
The New Markets;
Railway Stations;
Docks;
Holborn Town Hall;
The Guildhall;
St. Paul's Cathedral;
Bow Church;
St. Stephen's Church, Walbrook;
Mansion House;
The Bank of England;
The Royal Exchange;
The Monument;
The Custom House;
The Tower of London;

and any street improvements recently carried out, and any church or other building worthy of retention.

This plan has main lines of streets running east and west, north and south, and diagonally, the smaller streets being parallel, and affording large square building sites and dwellings, with open spaces and recreation-grounds for the

health of the inhabitants. St. Paul's Cathedral is opened up, and stands in the midst of an ellipse with a major diameter of 1,200 feet and a minor diameter of 600 feet. Roads, 100 feet wide, skirt the ellipse, which would be separated from the roads by granite posts, at convenient distances, and not by railings.

Trees, at wide distances, would be planted around the ellipse, but so as not to interfere with the view of the Cathedral.

Large sites, isolated, and surrounded by wide thoroughfares, have been set out for banks, insurance offices, and other large and important buildings.

A new street parallel to the quay, and 100 feet wide, runs from New Bridge Street, Blackfriars, to the Tower. Between this new street and the quay are large blocks of warehouses.

Billingsgate Market is opened up, a wide open space is carried through at the north of it and the Custom House, and a new market, for dried fish, might be built at the east side of the Custom House.

The Tower railing would be altered as shown, and a large square formed on part of the site of Trinity Square.

A new subway or bridge should be built across the Thames here, and Little Tower Hill widened, on the east side of the Tower, to meet this subway or bridge.

Eastwards of the Tower, main thoroughfares 100 feet wide are carried along to Limehouse, providing large blocks for warehouses and dwellings, with open spaces and recreation-grounds.

Large sites are cleared for the extension of St. Katharine's and the London Docks.

The remainder of the plan as regards outlay speaks for itself, and the other features of it are as follows:—

(A) Sites for churches, in the midst of ornamental gardens.

These would be fine parish churches, and sites for others would be provided in the new streets.

(B) Sites for technical schools and public libraries, in the midst of ornamental gardens. Sites for others would be provided in the new streets.

(C) Sites for public swimming-baths for men and women, and gymnasia, in the midst of ornamental gardens.

(D) Sites for theatres, in the midst of ornamental gardens.

(E) Sites for mortuaries, in the midst of ornamental gardens, and near the churches.

(F) Large recreation-grounds, with shallow ornamental waters.

(H) Arrangement of plan, as shown in detail on Drawing No. 2. Warehouses and manufactories in front, with dwellings and shops for the workpeople at the rear, and recreation-grounds in the centre. H^A is the particular one shown on Drawing No. 2.

Trees are shown round all the enclosures, thus avoiding the necessity of railings. Posts and chains might be placed where needed.

The blocks have been set out in the most varied manner, as regards size, so as to suit the different requirements.

I may mention here that there are at the present moment at least three opportunities for *easily* accomplishing great improvements, which should not be allowed to slip away. Two of them, viz., the opening from Charing Cross to the Mall of St. James's Park, and the widening of the roadway at the eastern end of St. Paul's Cathedral, have been referred to herein, and the third is a new street proposed by Mr. Charles Forster Hayward. The new street would run from the Strand near St. Clement Dane's Church through a large circus south of Lincoln's Inn Fields, and thence by a curved stretch passing along the backs of the houses on

the west side of Lincoln's Inn Fields, and so into Holborn and northwards.

Drawing No. 2.

This drawing is an enlargement to a scale of 32 feet to the inch of the block marked H^A on Drawing No. 1. The other blocks marked H might be similarly arranged, but to different dimensions.

The plan shows suggested sites of varied size, as they might be leased, and it will be observed that the large sites for warehouses and manufactories are in front; then an open space 40 feet wide surrounding the whole of the blocks, thus obtaining a current of fresh air all through, and preventing any great spread of fire; then the dwellings of persons employed, perhaps, in the front warehouses; then an open area 5 feet wide; then the footpath, roadway, &c.; and then the recreation-ground, with ornamental water in the centre.

Enlargements of one of the blocks marked Z, for workmen's dwellings; and a block marked X, for single-men lodgers, are shown on Drawing No. 4.

Drawing No. 2 also shows the suggested roads, footpaths, &c., and the lamp-posts and gullies, and the position of the subways.

Drawing No. 3.

Shows in plan and section the open areas, vaults under footway, roads, subways, &c. One section shows a subway where houses are on one side of the roadway and ornamental gardens on the other; the other shows a subway where houses are on both sides of the roadway.

The subways are spacious, and contain the sewer, 4 ft. 6 in. by 3 ft. The sewers in the large thoroughfares

would, when taking the sewage of the subsidiary thoroughfares, be correspondingly increased in size. I have shown the sewer nearly egg-shaped, in order to obtain the greater impetus which the reduced section at the bottom secures.

The remaining part of the subways is taken up with gas-mains, water-mains, and space for telegraph and telephone wires.

Adequate entrances to these subways would be placed at convenient distances apart.

The subways are ventilated by the shafts shown. These shafts would be placed at convenient distances apart, and the doors to the entrances would be iron frames filled in with Hyatt's or other ventilating-lights, to give light and air to the subways. These entrances could be in connection with the refuges in the roadway as shown.

The drain from the dwelling is shown connected with the sewer, but intercepted by the ventilating-shaft, with a syphon-trap on the sewer-side.

The footpaths might be of Victoria or other patent stone, the curb of granite, the channels of granite, three courses wide, the centre course sunk one inch below the other two. The road would be that known as macadam, which is in my opinion, as before stated, if properly formed, rolled, and attended to, the best road-metalling. The whole of the footway, channels, &c., should have a good foundation of concrete.

The material arising from the demolition of the old buildings, with the best of that arising from the excavations for subways, &c., might be ground in a pug-mill, and used in the new works. This mixture of material with good Portland cement or lime, makes excellent work of the strongest kind. Mixture of coke-breeze and Portland cement is now used very largely for steps, pavings, and walls. This

is an industry capable of great development, and it might be taken advantage of to a very large extent in the construction of subways, walls, &c.

The separation of the road from the footway next the recreation-ground might be of iron posts and chains, as before stated, with occasional openings.

Drawing No. 4.

This drawing shows an enlargement, to a scale of one-eighth of an inch to the foot, of a block marked Z on Drawing No. 2, and of a block marked X on the same drawing.

These plans speak for themselves, and I shall only, therefore, direct attention to the convenience, light, and ventilation shown by them, and to the provision of three, two, and one room dwellings, so as to, as far as possible, vary the accommodation to suit varied requirements.

Each set is self-contained, having its own water-closet (constructed as a combination water-closet and slop-closet), sink, &c. I do not at all agree with the usual plan of workmen's dwellings, where the water-closets and sinks are placed on the landings. They are then common to all the inmates, and the arrangement is detrimental to convenience and morality.

In my plan the water-closet is outside the set, but inside the entrance-door; and by the section at the side of the plan will be seen the method of obtaining light and ventilation for the w.c., which is not, therefore, directly in front of the building.

In the 40 feet open space at the rear of the dwellings, I have placed the washhouse, and the covered play-place for children.

The plan for single-men or single-women lodgers provides for that numerous class who really only require and can only

afford to pay for one living-room, and to this plan, which is an improved lodging-house, I invite particular attention. It will be seen that all these rooms and corridors are well lighted and ventilated. Each room has its fireplace and sink, with slop-sink under, the w.c's., urinals and lavatories being placed at the end of the block, and ventilated by open areas.

A large kitchen or hall is provided in which the occupants might cook and take their meals, or they might cook their food and take it to their own rooms, or do both in their own rooms.

A large library and reading-room is also provided, and this would be found to be a great boon to the occupants of the dwellings.

Open yards are also provided within the block, and in addition there is the 40 feet open space at the rear.

The dressers and cupboards, shown on the plans, should be strongly made, and become fixtures of the dwellings.

The dwellings could be warmed by hot-water pipes, fed from a boiler to be fixed in the basement, or at the back (in the case of the single-room dwellings) of the large range in the kitchen.

Every step possible should be taken to prevent the abuses of overcrowding. But, this done, I would be very chary indeed in holding out the slightest hope to the working man that he may be able to obtain his dwelling almost for nothing. I believe that, in numerous cases, this philanthropy leads to more laziness on the part of the working man. If he thinks he can get for 2*s.* per week a room which is fairly worth 2*s.* 6*d.*, he will, of course, take advantage of the opportunity, but it may be concluded, in many cases, that his wife and family derive no benefit whatever from the reduction.

I should propose, as I have herein mentioned, to use

largely in the new buildings material composed of coke-breeze and cement, and other forms of concrete. The elevations would, however, be of brickwork, made to look as cheerful as possible, and not so "barrack-like" as many of the workmen's dwellings now built.

Drawing No. 5.

This is a copy of the plan prepared by Sir Christopher Wren for rebuilding the part of London destroyed by the Great Fire, and shows the grasp he had of what was proper for the great City he has done so much to embellish.

THE FINANCIAL ASPECT OF THE SCHEME, AND THE METHOD OF CARRYING IT OUT.

Judging by the astonishing patience with which we submit to the continued and ever-increasing annoyance, loss of time, loss of money, and loss of temper, consequent upon the retention of thoroughfares no longer adequate for the strain put upon them, and judging also by the recent failure to effect that much-to-be-desired improvement, the widening of the roadway at the eastern end of St. Paul's Cathedral, it might, I think, be assumed that there are not at disposal any means by which such improvements as I have just described can be effected.

The system adopted in Paris, under Baron Haussmann, was one which cannot, from a financial point of view, commend itself to us. There the City bought out the tenants, pulled down the houses, laid out the new thoroughfares, made the roads, &c., and then sold, by tender, the freehold of the ground for building purposes. Except that out of it the City has erected municipal buildings, theatres, hospitals, churches, &c., and the new Hotel-de-Ville, the result of this method is a debt of about £60,000,000 sterling, representing, with the

exceptions I have mentioned, the difference between the price at which the ground was sold and the sum paid for its acquisition. By reason of the splendid improvements in Paris rents have risen enormously in the neighbourhoods in which they have been made; but, having sold the freehold, the City has not benefited by the increased value, and the "unearned increment," as it is so erroneously called, has gone into the pockets of the landlords.

I apprehend that the capital of a country exists not only for the benefit of the absolute dweller in it, but is of importance to every subject of the Empire; the commercial and government centre is used practically by the whole community, the necessity for increased accommodation in the thoroughfares, the increased attractiveness, and sanitary perfection of the Metropolis, concern therefore, to a proportionate extent, not only the dweller in it, but every Englishman. That being so, it would appear equally clear that, towards such improvements, the whole State should in some manner contribute, and I put it forward as a point entitled, perhaps, to some consideration in dealing with London improvements.

In effecting the clearances necessary for the proposed improvements, the important consideration of disturbance must be borne in mind. The areas should be gradually cleared, and whilst sufficient should be scheduled at one time to better the locality and to effect improvements which once done will meet all possible anticipated wants, there should be no attempt to level vast areas at a blow, or to so proceed that dislocation of business would ensue. With this view I should calculate to complete the improvements shown on my general plan in thirty years from their commencement, and every step made, however slow, should always have the ultimate scheme in view.

The first consideration would be to obtain Parliamentary sanction to the general improvements decided to be necessary,

and to acquire, either on the lines of the Lands Clauses Consolidation Acts, or on the lines of fresh amendments to those Acts, the freeholds of the areas involved in the scheme. There should be special Courts of Arbitration appointed to determine the value of those freeholds, and the question, whether or not the 10 per cent. for compulsory sale should be added, should be left to the discretion of the Arbitration Courts, who should be guided in their decisions by the state of structural and sanitary repair of the premises to be acquired, and by other considerations, and from whose decisions there should be no appeal.

When the freeholds had been so acquired the lessees and occupiers should be informed that at the end of their terms the premises would be required for the improvements. If any of the premises stood in the way of a particular scheme, and the necessity for their immediate removal appeared desirable, negotiations for their acquisition could be opened. If the sums asked appeared to the Arbitration Courts to be reasonable, the interests should be purchased; if not, the end of the term should be awaited, unless it was so far distant as to interfere with a line of improvement, when the Courts should, as before, determine the value of the existing interests.

An area being acquired, the Department of Works, which should be constituted specially for the purpose, and which should consist of a minister, secretaries, architects, engineers, and surveyors, should proceed to effect the clearance, and form the roads, footways, subways, and sewers.

Sites for banks, insurance offices, and other large commercial buildings should then be offered to be let on building lease for terms not exceeding ninety-nine years, the buildings to be erected being subject to the approval of the Department of Works, and the rents fixed so as to secure recoupment for outlay.

Upon other sites the Department of Works should proceed itself to erect such general structures and dwellings for the poorer classes as the wants of the particular localities appeared to demand. These structures should be designed in the Department of Works, and their erection put up to competition.

Leases of the buildings to be erected by the Department of Works should be for terms not exceeding thirty years; and, although the rents would be rack-rents, they should be kept down to the lowest remunerative figure to ensure immediate occupation, and, should that remunerative figure not be obtained, a less figure should be accepted, but for terms not exceeding seven years. By this method the locality could be filled up, the natural increase of value would follow, the reversion would be distant only seven years, and then the larger and remunerative rents could be easily obtained from tenants whose seven years' occupancy had improved the locality and warranted the increased rent on a filled-up estate.

The system I have above outlined may be thus briefly stated:—

1. Parliamentary sanction to be obtained to the general improvement scheme to be completed in 30 years.

2. Arbitration Courts to be appointed to determine values, from which there should be no appeal, thus shortening all negotiations.

3. Only freehold, and, except where impossible to do without them, not leasehold or occupying interests to be acquired.

4. The creation of a Department of Works, to carry through the scheme.

5. The Department of Works to form roads, sewers, subways, &c., let sites to large commercial houses, and itself build smaller and required commercial buildings and

dwellings for the poorer classes, and thus get rid of the middleman.

6. The State would thus become the freeholder of the land acquired, utilising the profits in reduction of taxation, and so paying back the money which it has obtained in the manner hereinafter described.

The next consideration is how to get the money to proceed with the scheme, and hoping that my proposals will not be considered of too revolutionary a character I would thus obtain funds:—

1. The London Coal and Wine Duties now received by the Metropolitan Boards of Works expire on July 5th, 1889. They produce about £250,000 per annum. Secure these for the new Department of Works, which would thus relieve the Metropolitan Board of Works from duties which could be better carried out by such a Department as I suggest.

2. There are in Greater London over 685,000 houses, and there will be shortly, say, 700,000. From the lessees of these houses obtain an *average* of £1 per house per annum for 30 years, thus bringing in £700,000 a year to the Department of Works.

3. The area of Greater London is, say, 400,000 acres. Deducting from that area, say, 15,000 acres for the roads and footpaths, and 15,351 acres for the parks and open spaces, there remains, say, 370,000 acres of land utilised as building ground, including in that term the sites of the houses, the forecourts, and the gardens, &c., attached thereto. Now, if £1 is the average amount fixed for each house, I do not think that an *average* of £4 per acre per annum for 30 years would be excessive for the land. This would realise £1,480,000 per annum.

4. The subways being utilised by the Water, Gas, Telegraph, and Telephone Companies, levy a rate for such use.

Thus, from these sources, the Department of Works would

have in hand, every year, nearly 2½ millions sterling, a sum quite sufficient for the amount of work which could be quietly and without rush accomplished in each year.

I think that I shall not be accused of understating the case if I approximately estimate the cost of acquiring the freehold and other interests in the areas I require, and of forming the new streets and improvements shown on my plan, at the *average* sum of £1,000,000 per mile lineal; I consider that a fair *average* estimate supposing that I proposed to acquire also all the leasehold interests, which, however, I do not, as I have stated, propose to do.

The total length of the new streets, widenings, and quays shown on my plan and edged with red, including the new avenue across the Regent's Park and that at the side of the Green Park, may be stated to be about 67 miles. The cost, therefore, of the scheme may be put at £67,000,000 sterling. The amount received from the Coal and Wine Duties and from the rate on land, houses, &c., being say 2½ millions per annum, and the time for completing the scheme being 30 years, the total amount received during that period would be 75 millions sterling, well covering therefore the estimated amount required; at the end of which time the State would be in possession of the freeholds and the other interests acquired, besides the rates from the Companies using the subways for their pipes and wires. A large sum would be at disposal towards the reduction of taxation, the owners and lessees would receive back what they had given, and perhaps more, London would be the resort of many who now regard Paris as their Elysium, trade and commerce would be thereby increased, the arts and science would flourish, the many thousands out of employ would be busy, and the latter part of the nineteenth century would, I venture to say, be identified with the initiation of the grandest and most beneficent work of modern times.

Mr. E. C. Robins (Fellow) said he had great pleasure in proposing a vote of thanks to Mr. Woodward for his very interesting Paper. He thought all would agree that it contained a vast number of most ingenious suggestions for the improvement of the Metropolis, and the facts on which he had based his Paper had been collected with much industry, and recorded, so far as he could judge, with accuracy, so that the Paper could not fail to be of value, if only looked on as an *aide-memoire* to others working in the same field. Personally, he felt great interest in the Paper; for he had that day received from the Secretary of the Society of Arts a volume, which he had much pleasure in presenting to the Library of the Institution, containing the three Westgarth prize essays on the realignment and reconstruction of London, for which prizes of 100 guineas each had been awarded; and the author of the first of these essays was the gentleman who had read the Paper that evening.

All three Papers showed an amount of thought and knowledge which would well repay their study. The question of whether or not this enormous scheme could be carried out was one upon which opinions would differ, but it was worth serious and careful discussion.

How Mr. Woodward's estimate of the probable cost was arrived at he had yet to learn, but if it were true, as had been asserted by the late Lord Mayor, that it would cost 100 millions to reconstruct Lombard Street alone, the author's 67 millions for the whole would fall very far short of the mark.

Leaving out of consideration the grand central scheme of reconstruction shown on the plans, it would be admitted that almost all the improvements of present streets, and the elongation of others, would commend themselves as necessary and practicable. The chiefs of great bodies such as the Metropolitan Board of Works and the City Commissioners

of Sewers, ought to possess a plan of the kind, showing all possible and desirable improvements, so as to have ready to their hands a comprehensive and well-considered scheme in the event of an opportunity arising of carrying out improvements in one general direction. If this had been done, ministers and others, better understanding the ultimate end in view, would have been more ready to acquiesce in such improvements, and especially the opening of the Mall into Trafalgar Square, and the widening of the mouth of Charing Cross therefrom (which was now but 70 feet wide), to the same width as Whitehall, opposite the Horse Guards, viz., 115 feet, in view of the erection of Government offices, which were to cost upwards of £500,000.

Mr. T. Chatfeild Clarke (Fellow) had much pleasure in seconding the vote of thanks. It was very improbable that even the youngest man in that room would live to see any approximation to the complete execution of so gigantic a scheme as that sketched in the Paper; but, taking many of the improvements individually, they struck him as useful and judicious.

One of the most pleasing characteristics of the Paper was the author's manifest desire for the improvement of the health and comfort of the poorer classes of this great Metropolis; but it was difficult to see how those desirable results could be achieved, to any appreciable extent, without a complete change in the administration, by placing it under a single, fully-representative, and competent governing body, to whom the task could be committed of directing the improvements necessary for a population growing at the rate of 40,000 or 50,000 a year. A complete change of administration must, he contended, necessarily precede any large works of public improvement.

But the author of the Paper had not contented himself

merely with a general plan, but had gone with minuteness into the details of building and street construction. As regarded the latter, who could walk through the streets of the City without being impressed by the necessity for some changes in the prevailing system of ripping up the streets? This was not only done for the sewers and for gas and water pipes, but telegraph wires and hydraulic power were now being run underground all over the City of London, and the practice of constantly opening up of the surface of the streets had gone to a length that seemed positively insane, and a disgrace to our civilisation. He had himself, in conducting an improvement in the City, persuaded his clients to have a subway put in, but he had the greatest difficulty in getting the gas companies to put their pipes into it when it was constructed. This showed how behindhand the authorities of London were with regard to the primary and necessary conditions of construction for the London streets. Turning to the suggested plans for dwellings for the working-classes, perhaps the author of the Paper was not aware that lodgings with anything like a common kitchen had not hitherto answered in London. They did not appear to meet the wishes of the working-classes, who preferred to have their own houses complete; and he was not quite clear that the proposals for the construction and arrangement, and the method of ventilation, of those dwellings were such as would approve themselves to the consideration of architects in general. These, however, were mere matters of detail.

As to compensation and the question of cost, he felt that they were, to some extent, in cloudland. He was not prepared either to indorse or to negative the views under this head put forward by the reader of the Paper, but he believed that he had omitted one very material consideration. It was well known to all in that room that railway companies and other bodies in the habit of conducting large improve-

ments invariably took care to keep out of the line of the most valuable class of buildings and the most important businesses. Mr. Woodward did not seem to have allowed this consideration to enter into his calculations, but he would find that it entered very considerably into the estimates. He had been trying to calculate the immense cost of the short street from King William's Monument to Tower Hill—about five-eighths of a mile in length—and he believed it amounted to one and a quarter million of money. There was, he believed, a single case where the claim for one house was £128,000. Looking at these figures it would be seen how soon the estimates would run up in dealing with such a large amount of property.

Then, as to the mode in which the author dealt with leasehold interests, leaving these interests to expire when the leaseholders refuse to sell on reasonable terms, the result of such a system was to be seen on Ludgate Hill at the present moment, where the City had not thought it right to deal with those interests in cases where great difficulty and expense were entailed, and the public were complaining that the improvements have been so long standing over. He mentioned this to show that there were difficulties which presented themselves to the minds of practical men, and not with any desire to detract from the great thought and intelligence displayed by the reader of the Paper, who had put forward a scheme which he ventured to say (he hoped he was not speaking extravagantly) had probably not occurred to the mind of any other man in the room. There was one contingency which might, at any time, bring people face to face with a gigantic scheme of reconstruction—the effect of a great fire in London. It had often struck him that if a fire started on the south side of Holborn, and ran towards the Strand, no power which we possessed at present could check its course across the maze of narrow streets and

courts between those two thoroughfares. The result would be a vast clearance, which would offer an opportunity for giving practical effect to some of the suggestions contained in the Paper.

He must congratulate the author upon the care and ability displayed in his interesting Paper.

Mr. Banister Fletcher, M.P. (Visitor), thought it would be agreed that the extension of the quays on the south side of the Thames would be much too expensive, and too detrimental to the commerce of London, to be practicable. The author of the Paper had alluded to open spaces in other countries, and the comparative want of spaces in London, whilst proving by statistics that the death-rate of London was relatively much lower, thus seeming rather to destroy his own argument.

The author had suggested that ground-landlords should be required to give up a portion of their land to the public for open spaces. He questioned whether this proposal was quite equitable. No doubt it was most desirable in itself that in all building schemes provision should be made for open spaces; but he thought that the cost of a public benefit should fall rather on the public than on the ground-landlord. He feared, also, that the country at large would show some indisposition to be taxed, as Mr. Woodward suggested, for the embellishment of the Metropolis. With regard to the plans for dwellings, it struck him, though it was a mere detail, that the area at the back of the buildings might, with advantage, be increased in width.

The reader of the Paper had understated the revenue from the coal-duty, which would expire in 1889. It was stated a few days ago, at a meeting of the United Wards' Club of the City of London at which he presided, that the coal-dues amounted to £430,000 a year. Of these dues, 9*d*.

went to the Metropolitan Board of Works and 4*d.* to the City, or, to speak more strictly, 8*d.* and 4*d.*, because they cost a penny to collect.

With regard to the general plan, he noticed that the Law Courts were not opened up so well as they might be if the street coming down to them from the north were continued to the Thames Embankment.

He doubted if it were wise for a public body to build houses for the poor in London, and he was confident that, if they did, they would lose very largely. It was an objectionable system, and if leased as suggested, they might get houses on their hands at an inconvenient time.

Some of the outlying alterations shown in the plan were open to improvement, but the East-end portion of the scheme appeared to him to be exceedingly good, and he hoped, having some knowledge of the squalid condition of the courts and streets in that district, that some of these improvements would not be very long delayed. The idea of a large consistent scheme of the kind to be authenticated by a public body, and carried out as opportunity offered, was an admirable one.

The suggestion that leases, especially of business property, should be allowed to wear out, leaving the leaseholder without compensation at the end of his term, would scarcely commend itself, he thought, to the Meeting, for in such cases the rule was to renew the lease, and not to keep the ultimate forfeiture of the business hanging over the tenant.

Mr. T. Blashill (Fellow) thought they would hardly be doing justice to the writer of the Paper if they failed, at some part of the evening, to discuss the feature of his scheme which distinguished it from all other projects of improvements with which he was acquainted. His scheme was to clear the whole of the area coloured red on the map,

in addition to the demolition of a large number of outlying streets, and entirely reconstruct it. He was disposed to think that if the author of the Paper had given more attention to this area and less to the considerable number of details (very useful no doubt) into which he had entered, it would be somewhat better for the scheme, and tend to a clearer perception of his proposals. He was not disposed to say that the scheme was revolutionary. If it had any fault at all it was that it was impracticable. People were in the habit, in matters of business, of driving in the thin edge of the wedge, and this was generally found to be the best plan, but Mr. Woodward's wedge, he was afraid, was thickest at the thin end. He proceeded in a manner entirely opposed to that which had been hitherto adopted by men practically acquainted with carrying out improvements in a manner which, if not altogether successful, might be regarded as successful experiments at any rate, but he could not help seeing that in the carrying out of this scheme the idea was that practical men and practical ideas were to be, in some measure, excluded. Though there was a Metropolitan Board of Works, an entirely new body was to be created for the purpose, with a staff of surveyors, architects, and others to carry out the business in what struck him as a somewhat highhanded fashion, and thus get rid of the middleman, and do many things which were not essential to the working out of the scheme, but were mere details and of questionable utility. The Arbitration Courts were to be without appeal, which seemed a very serious proposal. Were we able, human nature being what it is, to constitute courts of any kind that would be absolutely infallible or nearly so? If they were not nearly infallible very great injustice would be done to somebody. He knew of no sort of Arbitration Courts or arbitrators that, under the influence of an eloquent speech, might not make mistakes. If mistakes were made, they

were remediable now, but under the plan proposed there was to be no appeal, which did not strike him as a particularly desirable arrangement, or any great improvement on the present system.

When he came to the figures (and the author would agree that the figures lay at the root of the whole matter), he found that to carry out the business, which was to run over thirty years, the amount of money proposed to be raised was 75 millions, for a scheme the estimated cost of which was 67 millions, which left a very scanty allowance for interest during the construction of the works and the carrying out of the operations during all those years, and it was much below the cost at which it could possibly be accomplished. Mr. Woodward was of opinion that the cost would be a million a mile. Before he saw the drawings, it struck him it would be useful to see how this would work out, and he estimated that a mile of street something like 60 feet deep on each side would have to be dealt with by way of land, though he saw by the drawings that it must be immensely in excess of that width. Unless he were wrong in his arithmetic, that meant about 30*s.* a foot. He did not know how far the experience of gentlemen in that room would support him, but it seemed to him that if all the work, the costs of arbitration courts, the construction of streets, tunnels, viaducts, the laying out of open spaces, the improving of public buildings, and the purchase of freehold interests in the vast area shown on the plan, including the most important part of the City, could be accomplished for the sum of 30*s.* a foot, he did not know anything at all about the business. But he was afraid the author was under the delusion that if the freehold interests were bought, and the leasehold interests were left to die out, something would be gained. As a matter of fact, unless there were some great rise or fall of prices,

the result would be precisely the same at the end of the leases, the only difference being that the interests would be all in the one hand instead of two or more. He ventured to think that if it were a question of adopting a scheme on any such scale, Mr. Woodward's was not the scheme to adopt. It would be preferable to rebuild London elsewhere where land was cheaper and the whole thing could be done at less cost. London was not necessarily at this particular spot. It was where the great public buildings of England were situated, and it would be less costly to remove it than to rebuild it. The cost was the point on which the whole scheme turned, and on which it must stand or fall.

Mr. J. Hebb (Visitor) thought, even if the author of the Paper had taken a somewhat too sanguine and sweeping view of his subject, no one could deny that his scheme was grandly conceived, and that the details of it were worked out with very considerable skill and ability. Some would, perhaps, regard it as a mere dream, as altogether utopian and beyond the bounds of practicability; but it should be remembered that the dreams of one age often became the realities of another, and it was not impossible that much which Mr. Woodward had indicated might happen at some time not very remote.

At any rate, he had laid down some lines for street improvements which, so far, had not been challenged on the score of impracticability, whatever doubts there might be as to their cost; though, even in this respect, judging from what Mr. Chatfeild Clarke had said as to the cost of the improvement of Great Tower Street, Mr. Woodward had not very far under-estimated the cost of his scheme, taken as a whole. It was certain that the cost of improving the City of London must be so great, that in all probability it would have to be relegated to some far-distant future; but

there could be little doubt that a great deal could be done for the improvement of the centre and the outlying districts of London, judging from what had been done in other countries. The course taken by the authorities of the City of Milan was an example of how improvements might be carried out. When an outlying portion of that City was recently proposed to be built upon, instead of leaving matters to take their own course, in the way customary in London and elsewhere, and allowing it to become a mere affair of freeholder and leaseholder, and the creation of ground-rents, the Municipality of Milan referred the matter to the Society of Architects and Engineers, who drew up a very costly and elaborate scheme for the laying out of the suburb in question. Amongst other things, they suggested that a fine boulevard should be driven right through the suburb, and that a large parade-ground should be converted into public gardens, and acquired by the Municipality from the Government, and the money had been already voted for the purpose. To show the magnitude of the undertaking, he might mention that the proposed boulevard extended to a width of about 30 metres, and that the public gardens were at least 2,000 feet square. It was also proposed (an idea which would seem strange in London) to lower a railway which crossed the boulevard so as not to interfere with the proper laying out of the suburb. This was an example of what could be done for the outlying portions of a city, and it was not too much to claim that at least as much attention should be paid to laying out the outlying portions of London.

With regard to an observation of Mr. Robins as to the necessity for plans for laying out portions of London, it was only due to the memory of Mr. Marrable, the first superintending architect to the Metropolitan Board of Works, to state that very early after the institution of the Board, he drew up a good plan showing several

suggested improvements, many of which had been since carried out.

Mr. J. Hayward, F.S.A. (Visitor), looked upon the Paper as embodying many valuable suggestions. One of the results of producing a plan under the stimulus of the prizes offered so munificently by Mr. Westgarth was, that the author had the courage to run his street lines without any particular reference to the properties intersected, and without regard to excessive width. He was consequently able to get straight lines, whereas, if he had to carry out the scheme in detail he would find himself under the necessity of frequently changing their direction. On the other hand the authorities were apt, in laying out practical improvements of the kind, to pay too much regard to the value of property, thus, not only spoiling the completeness of the improvement, but losing a good deal of recoupment. This could be plainly seen in cases where only one side of a street was taken and the other left, which was anything but an advantageous way of going to work, or where in carrying out a street widening, a variety of triangular spaces were left which had to be enclosed by railings, forming a receptacle for dead cats and all kinds of unsightly refuse. This was the result of too great a care for economy, and nothing was saved by it in the long run, though a vast deal was sacrificed.

As Mr. Woodward had been good enough to refer to a plan of his (Mr. Hayward's) for one of those improvements which he ventured to think must be sooner or later carried out, he would hand in a copy for the Library, explaining that it related to a line of street northwards from the Strand, near the Law Courts, into Holborn, which would connect Hampstead with Holborn by a single straight line. The improvement was only barred by the narrowing of Little Queen Street, and was certain to be carried out eventually.

If it were done in some such way as he or Mr. Woodward had suggested, the advantage would be so obvious that it would lead to further improvements in the same direction, and the neighbourhood it traversed was so poor, and so open, that the expenditure involved would be comparatively small, while the recoupment would be proportionately great.

Although "Greater London" was only at present a geographical expression, he, like Mr. Chatfeild Clarke, hoped that some day there would be a great central authority to decide when and where improvements were to be effected, and who would be able to obtain the necessary powers from Parliament to carry them out.

One lesson to be learnt from all this was the great loss of opportunity which was constantly occurring. To quote one instance which happened 25 years ago, and to which he had given much attention at the time. When people were discussing the proposed construction of the Thames embankments, an opportunity offered of effecting a great improvement opposite Somerset House at the end of Waterloo Bridge, but it was entirely lost. He would like, in conclusion, to add his testimony to the value of the Paper.

Mr. R. Vigers (Fellow) thought that one point had been missed by some of the speakers who had addressed themselves to the question of cost. It seemed to him that Mr. Woodward, in working out his figures, though he claimed to see his way to raising a very large sum of money, had not taken credit for the recoupment of 134 miles of very valuable frontage which would certainly go a long way towards paying the cost. He mentioned this in order that it might receive attention in the course of future discussion.

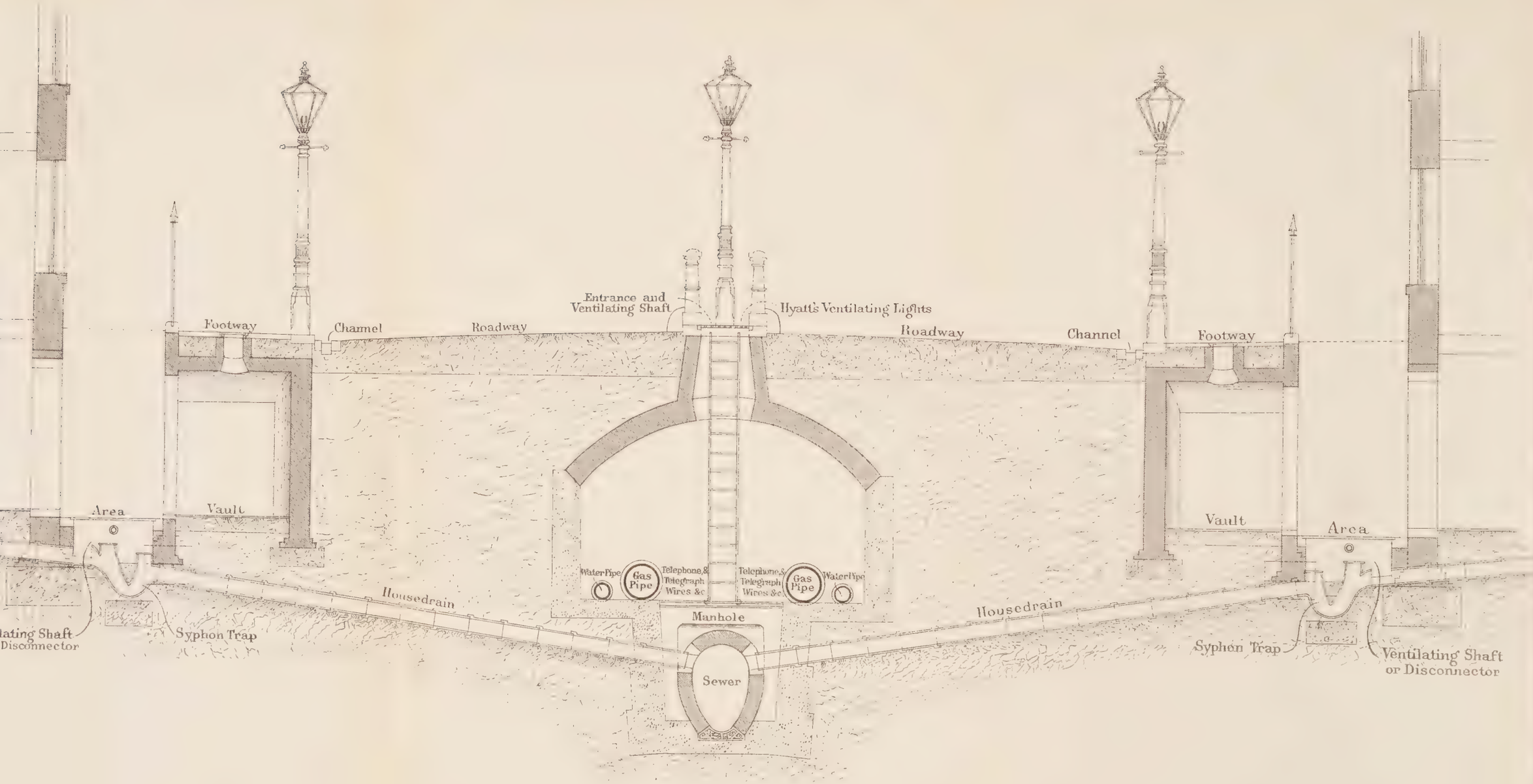
The vote of thanks having been put and carried unanimously, on the motion of Mr. H. H. Collins (Fellow) the discussion was then adjourned to the next Meeting.

To Illustrate Mr Wm Woodward's Paper on "London Remodelled."

Plan No. 5.

Section on Line C-D.

To illustrate Mr Wm Wood



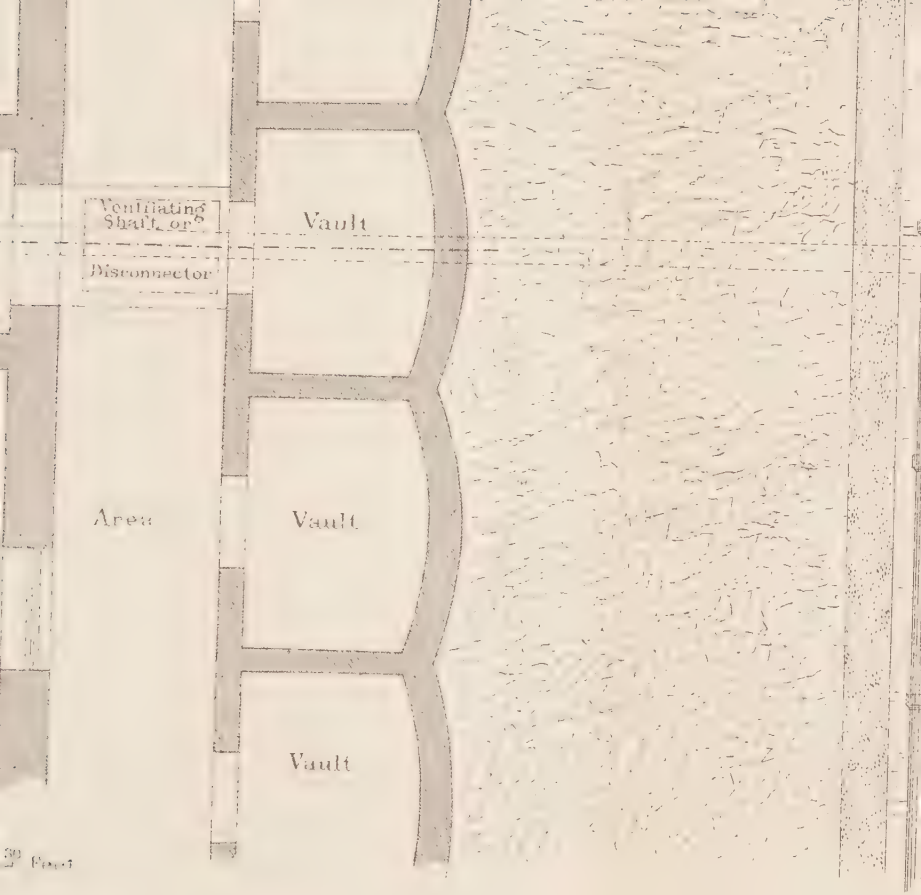

Ventilating Shaft, or 8
Disconnector
Vault
Area
Vault
Vault

PLATE XVII.

To Illustrate Mr Wm Woodward's Paper on "London Remodell

CHRISR WREN'S PLAN
FOR
EBUILDING LONDON.

Peter Thumer.

Scale of

No. 232.

AT

THE ORDINARY GENERAL MEETING

Held on Monday, March 8th, 1886.

THE PRESIDENT (MR. E. I'ANSON) IN THE CHAIR.

The discussion on the Paper by Mr. Wm. Woodward (Professional Associate), entitled "London Remodelled," read at the Meeting of Monday, February 22nd, was resumed by

Mr. H. H. Collins (Fellow), who said he regretted that the duty of reopening the discussion had not fallen into the hands of some one who was able to give the Paper unstinted praise. Had he not known Mr. Woodward personally, and been aware that he was one of the most genial of men, he would have come to the conclusion, from reading this Paper, that he was the most dissatisfied person in existence. Nothing in the arrangements of this great city seemed to please him, although many of the points in his condemnation were refuted by other passages in his Paper. Though anxious to give cordial recognition to the diligence displayed by the author in the collection and study of the immense amount of details which he had brought together, he was bound in candour to state that he regarded his Paper as one of the least practical which had been read before the Institution. What did Mr. Woodward complain of? He said that London ought to be "a grand, convenient, and healthy city." He (Mr. Collins) contended that it was in every sense a grand and convenient city, and indisputably the healthiest in the world.

As to its grandeur, the author had been at pains to point out that its rateable value had increased by £4,781,359 in the five years 1881-86, that in 1881 26,170 new houses were built, and in 1884—a time of depression—18,428; and as to its convenience, that the means of locomotion—the railways, trams, cabs, and omnibuses—had been multiplied enormously in recent years. So he maintained that, so far as grandeur and convenience were concerned, Mr. Woodward's figures proved the case against which his Paper was directed. Now, he ventured to think that the very surest way to repress all this development would be to lay down such draconic regulations as the author proposed. It was far better to leave these matters to that spirit of private enterprise which had produced the great results enumerated in the Paper. Who could look at the hospitals of London, at its schools, its public baths, artisans' dwellings, free libraries, workmen's clubs, or—to take a neighbouring instance—the street of clubs so close by the Institution, without admiring the enterprise, public spirit, and skill which had called them into existence without assistance from the State? Where was the city that could show nobler architectural works than Bow Church, St. Paul's Cathedral, or Westminster Abbey, or such costly undertakings as the Thames Embankment, on which the local authorities had expended six millions of money?

Regarding London from the point of view of public health, though its population was denser than that of ancient Rome (the proportions, he believed, were as 50 to 44 persons to the acre), it was the healthiest large city in the world, as Mr. Woodward's own figures went to show, its death-rate being but 19·7, as compared with a death-rate in eight other principal cities ranging from 31·9 in St. Petersburg to 23·8 in Brussels; and the comparison was still more striking when Dr. Russell's vital statistics of the city of

Glasgow were put in contrast. The fact had been pointed out by the lamented Dr. Farr, and emphasised by Dr. Russell in his Paper, that "of the general relationship of a high density to a high death-rate there can be no doubt," and that "the size of a town makes a high density tell more severely on the conditions of health," and that "one acre inhabited by 84 people is not so grave a physical fact as 6,000 acres inhabited at the same rate." Yet, notwithstanding the fact that this very condition existed at the present day in London, and tended to make it one of the unhealthiest of cities, the energy brought to bear in a patient quiet way, in recent years, in improving drainage, providing open spaces and clearing away unhealthy districts, had neutralised these conditions, and rendered London, according to Mr. Woodward's own statistics, the most healthy city in the world.

In a Paper by Mr. Ernest Hart on "London, Old and New," he found some figures which were worth recording in the "Transactions." "The enumeration of London within and without the walls in 1631 gave the population at 130,100. The annual rate of mortality for the period 1620-1643 was no less than 70 per 1,000 persons living" (he believed Dr. Lyon Playfair gave it at 80 per 1,000). "During the years 1728-1757 the mortality in London was equal to 52 per 1,000. In the first ten years of the present century (1800-1810), the death-rate in London was 29 per 1,000" (mark the gradual improvement). "In 1840, weekly returns of births and deaths in the Metropolis were first published by the Registrar-General; from that date to 1870, the annual rate of mortality averaged 24·3 per 1,000 persons living. In 1871-1880, during which period the Public Health Acts of 1872 and 1874 came into operation, the death-rate still further declined to 22·5 per 1,000. During the four years of the current decade that have already

elapsed the decline in the London death-rate has been still more marked, the mean of these four years being only 20·9 per 1,000, the rates in the several years being the lowest on record. Since the cholera epidemic of 1849, the necessity of taking more active steps to promote sanitation has been generally felt. Health-officers have been appointed, more thorough measures have been adopted in connection with sanitary work; and the vast improvement that has already taken place in the health of the inhabitants of London indicates the measure of success that has attended their efforts. In 1660-1679 the rate of mortality from small-pox averaged 4·2 per 1,000, whereas during the ten years 1871-1880 (which included the period of the last epidemic) it was only 0·46 per 1,000, a little more than a tenth of that which prevailed in the earlier period. The reported cases of fever, plague, cholera, and dysentery constituted two-fifths of the mortality, and were fatal to 31 persons annually in each 1,000 of the population. The death-rate from small-pox, measles, and scarlet fever, taken together, is now less than one-third of that formerly caused by small-pox alone. Fever has progressively declined since 1660, and the mortality from this disease is now only about one-twentieth of that which then prevailed."

Then again, Dr. Richardson had pointed out that certain diseases which were rife in London at the beginning of the century had now entirely disappeared. Take ague, for instance; doctors now scarcely knew what it meant. He would not say there was none, but there had scarcely been a true case of the disease in recent years. All this pointed to the fact that London was the grandest and most healthy city in the world. He failed, therefore, to see the advantage of a large portion of Mr. Woodward's scheme. Some of his suggested improvements might, no doubt, be carried out with benefit to the Metropolis; but the vast alterations delineated

on the map on the walls of that Lecture Hall were of more than doubtful utility, while they would destroy a large number of very valuable interests which it would be very difficult to revive.

The author said on page 227:—"To expect to-day that a private landlord, the Metropolitan Board of Works, or a city corporation would give up so much per foot superficial of ground-rent in order to provide ample and healthy breathing or recreation space for the dwellers in this vast city, is to betray a lamentable ignorance of their commercial instincts." This struck him as somewhat unjust to the bodies referred to. Had the author forgotten the great and successful efforts of the Corporation of London to endow the people with Epping Forest, Burnham Beeches, &c., and the public spirit displayed by them in other ways which would at once occur to the remembrance of the Meeting? He did not think it could be fairly said, either, that the Metropolitan Board of Works or the Corporation, in view of what had been done in reference to Battersea Park and Hampstead Heath and other open spaces, had exhibited a selfish spirit, or a desire to promote their own to the neglect of public interests. Then there was no city in the world which had such pleasant open spaces. Look at the London parks! In Paris, which was cited in the Paper as a city of open spaces, the public parks lay a long way from the centres of dense population, but here they were in the midst of the people, north, south, east, and west.

He would now pass to criticism of some of the detail plans appended to the Paper, and in doing so he was, he believed, acting in accordance with Mr. Woodward's own wishes in the matter. On referring to Plans 3 and 4 of single-room dwellings it would be seen that Mr. Woodward had put that very necessary but sometimes very objectionable convenience, the w.c., at the end of a passage common to all. Mr. Godwin, who was on the Royal Commission, for

the Housing of the Working Classes and who had a very large experience on the subject, pointed out the physical and moral evils which resulted from this arrangement, which, he ventured to think, would not commend itself to architects generally. If anything went wrong with these conveniences in ordinary workmen's dwellings the difficulty was to know whom to blame and how to prevent its recurrence, but in the case of a large number of single rooms this difficulty of fixing the blame or correcting the evil would be doubly great.

He did not know whether Mr. Woodward meant it, but he understood that he proposed to put a slop-sink in the room, and, bearing in mind the fact that the rooms were only 13 ft. by 9 ft., the arrangement seemed objectionable; and neither this nor the plan for lighting and ventilating it would, he thought, commend itself to the minds of those who had practical information on the subject. With regard to these one-room dwellings, was it a scheme which it was desirable to enunciate at all? If the Members turned to the work he had referred to on the vital statistics of the city of Glasgow—which was essentially a city of one rooms—they would find that the author, speaking of the percentage of population living in houses of one apartment, said:—"This is a social fact of great importance. That the four walls of a single room, whatever its size, is the common space in which all the functions of family life are to be performed, in which life is begun and ended, cannot but have a grave relation to the moral tone of the family. It has evidently also a close relation to physical health." He (Dr. Russell) then took a general survey of the columns of mortality, and showed how high the death-rates were where that state of things prevailed, and went on to say:—"Putting aside Perth, which has the smallest proportion of small houses, we find at one end of the scale Aberdeen, with 13·6 per cent. of its inhabitants living in one room, and the lowest death-rate; at the

other end Glasgow, with the enormous proportion of 24·7 per cent., and the highest death-rate." So much for the sanitary aspects of the scheme.

He now came to the author's financial proposals. It was very easy to sit down, with a map before one, and draw lines, after the manner of NAPOLEON III. instructing Baron HAUSMANN. Such things could be done under a system of autocratic and despotic rule, but not in a country like England. He noticed that Mr. WOODWARD's proposals involved (to take only a small part of the area) the demolition of the Adelphi, Drury Lane, the Vaudeville, the Gaiety, the Lyceum, and the Opéra Comique theatres; the Bluecoat School, and a large portion of Cheapside, a great part of which had been almost reconstructed in consequence of recent fires. Some of these Cheapside houses were costly and imposing structures, which would have to be removed for the widening shown upon the map; and these were only a fraction of Mr. WOODWARD's proposals, which involved other expensive items like the construction of viaducts, subways, and tunnels. He had tried to ascertain the outlay on the Holborn Viaduct, and found that the land alone had cost a million of money. What happened when Skinner Street was destroyed for the erection of the Holborn Viaduct would be remembered by many in that room. The whole business and markets which appertained to the locality vanished and have never been replaced, whilst for years afterwards the cleared area did not yield 2 per cent. to those who were foolish enough to take the cleared land at £15,000 per annum, showing that when a market or a business locality was once destroyed it took years to revive it and bring back the business displaced. But was not a good deal that Mr. WOODWARD proposed, in slow but actual progress at the present time? He found in the report by Colonel HAYWOOD, on works executed by the City of London during the year 1885, a list of improvements, consisting of no less

than thirty streets in leading positions, which alone would absorb a good deal of Mr. WOODWARD's 67 millions. Why, the cost of the land for the widening of the corner of Prince's Street, Mansion House, if he were not mistaken, was something like £50 a foot superficial!

It had been suggested by Mr. ROBINS that the authorities ought to possess a map showing all the contemplated improvements. It was not difficult to foresee the class and the number of the compensation claims that would arise if people only knew beforehand, by means of such a map, where improvements were to be carried out, and it was a very happy thing for public bodies purchasing land that no such map was in existence.

The principle suggested in Mr. WOODWARD's Paper for dealing with leaseholds, was to buy the freehold and let the leases expire; in other words, the State was to become the freeholder and turn out the lessees after they had made the value of the property. In Cheapside, for instance, the property was held on 80 years' building leases, under which vast sums of money had been expended by the lessees, the property being subleased, in some instances, many times over. Yet all these interests were, according to Mr. WOODWARD, to be confiscated at the end of the term.

He would not trouble the Meeting by criticising in detail the machinery by which Mr. WOODWARD proposed to carry out his gigantic scheme. With his suggested abolition of the present successful system of arbitration, and the substitution of a despotic tribunal from which there was to be no appeal, and with his proposed centralisation of powers in a Department of Works, which would only create an office for jobbery corruption and favouritism under whose sway the landowner's life would be a burden to him—but would pass on to the most startling of his financial suggestions, (next to his proposal for hypothecating the coal and wine dues, to which several exist-

ing bodies would have something to say,) the suggested imposition of a tax of £1 per annum for thirty years on every lessee of a house. He calculated that there were 700,000 houses in London. How many of them, might he ask, belonged to poor people who could not even afford to pay the present rates and taxes?

Mr. Woodward: One pound, on the average.

Mr. Collins: So that in some cases the tax would amount to £5, £10, or even £20 a year. How long would it be before people would begin to cry out for the repeal of such a tax? But he was not satisfied even with this, but went on to propose (p. 251) that if £1 was the average fixed for each house, an average of £4 per acre per annum for thirty years would not be excessive for the land; and finally suggested that subways and telephone wires should be constructed, for which the companies who used them should be taxed. In fact, nothing was to go untaxed, in order to carry out the proposals contained in the Paper. He was sorry to have to criticise so adversely a Paper on which the author had expended so much time and thought. The Institution was under obligations to him for the trouble he had taken in the matter, and there were statistics in the Paper of great and permanent value; but it should not go forth from a body like The Surveyors' Institution that the scheme put forward by the author was such as commended itself to practical men.

Mr. E. Ryde (Past-President) desired to say at the outset that he was very pleased the Paper had been written, and that it would find a place in the "Transactions." He was very pleased, in the first place, to find amongst the Members of the Institution a gentleman, not too old, with sufficient

industry to undertake the task of writing such a Paper, which must have involved much labour and research. But while saying this he was glad to see it placed on record, in the remarks made by Mr. COLLINS and other speakers, that the Institution was not of opinion that the scheme was within measurable distance of practical realisation, He thought also that the estimates put forward were merely "in cloud-land," as Mr. CHATFEILD CLARKE had put it. Not that he was able to disprove the accuracy of these estimates. He believed that no man living could either prove or disprove their accuracy. It was not easy, anywhere near London, to make an estimate of the probable cost of demolitions of property, even with the best plans and the most accurate information, but it was absolutely impossible to do so with inaccurate plans and imperfect information.

He was not without experience in matters of the kind. He found, for instance, that he had spent 2½ millions of money in buying land for the Charing Cross Railway, with its two stations, although the greatest possible care was taken to avoid anything unusually costly and difficult to purchase. This line went through some of the poorest and cheapest house-property in London—a class of property the cheapest to buy because there were not many large trade interests to pay for. Then, in 1871, he made an estimate for what was called the London Central Railway, between Euston, St. Pancras, and Charing Cross. That estimate amounted to £1,150,000. The Act was obtained, but the scheme fell through because of the difficulty of getting the money, although in this case a guarantee was obtained from the North Western Railway Company of 5 per cent. on the capital.

Then there was the Leicester Square Market scheme, at an estimated cost of £300,000, not a farthing of which was subscribed. The Mid London Railway scheme to cost

£1,000,000; the City and West End Railway in 1872-3, to cost £2,000,000; the London Central Railway of 1872-3, to cost £1,160,000; the London Central Railway of 1880, to cost £2,000,000; and a line from Bricklayers' Arms to Clapham Junction, to cost £900,000. All these schemes, for which he had made the land estimates, were so laid out as to avoid taking expensive property, even public-houses, and yet the money with which to carry them out was always the great difficulty. The proposal in the Paper was to raise the large sum of £67,000,000 out of the local rates, assisted by taxation levied on the whole country, for the author's words were (page 248) :—"I apprehend that the capital of a country exists not only for the benefit of the absolute dweller in it, but is of importance to every subject of the Empire; the commercial and government centre is used practically by the whole community. The necessity for increased accommodation in the thoroughfares, the increased attractiveness, and sanitary perfection of the Metropolis, concern, therefore, to a proportionate extent, not only the dweller in it, but every Englishman. That being so, it would appear equally clear that, towards such improvements, the whole State should, in some manner, contribute; and I put it forward as a point entitled, perhaps, to some consideration in dealing with London improvements."

He observed that there was no proposal in the Paper for increasing the railway accommodation in London, and that, to his mind, was the greatest blot that it contained, for there was no better way of relieving the streets of London than by increasing the number of railways; and if by some little aid on the part of landowners, or taxpayers, railways could be assisted in such a way that the public were induced to again put their money into enterprises of the kind, many railways absolutely wanted might be made. Under present conditions it was impossible to raise the money to make these costly

London railways, which did not pay the interest on capital expended; but very little help on the part of landowners or ratepayers would turn the scale, and result in the provision of a large amount of additional accommodation of the kind.

Passing to another point, it was proposed to buy all the freeholds first and leave the leaseholds. That view was not confined to the author of the Paper, but had been growing for some time past in the minds of men accustomed to carry out compulsory powers. Nevertheless, it was theoretical, and not practical. It was of no use to buy the freeholds, and stop there. A lease, especially a long lease, conferred as much power on the owner to create expense as a freehold. What might be done was to purchase the property piece by piece, so that when a trade was interfered with, you might say "Here, Mr. Baker," or "Mr. Grocer, is your notice to treat. We will give you so much for your property, and will provide you with another house within a few yards of your present premises, where you may carry on your business as well as before." Something of the kind would cheapen the purchasing of property under compulsory powers and avoid the payment of large trade compensations. The Lands Clauses Act did not want amendment, as regarded the machinery for purchasing land under compulsory powers. No Act was absolutely perfect, but the Lands Clauses Act was as nearly perfect as one could hope to have it. Indeed, if every light-and-air dispute, and many civil actions, could be settled under the Lands Clauses Act, the law would, he thought, be much more equitably carried out as regards such matters than it was at present.

During the discussion, objections had been made to the want of an appeal. He thought it was one of the best things in connection with this Act that there was no appeal. The verdict of a jury was likely to be uncertain;

but, with a good arbitrator or umpire, substantial justice was sure to be meted out.

With reference to some of the author's statistics, he did not think that the growth of London could be gauged by such facts as the increased number of cabs. Indeed, the great increase in the number of cabs was one of the causes of their inferiority. Neither could it be gauged by the increased assessments. That was a very fallacious test. Property had been put up enormously by the Assessment Committees in 1885 which, he ventured to say, had not increased in value a single shilling since the previous assessment in 1880; but in many cases it was useless to appeal, because one would spend more in the appeal than the extra rates amounted to.

With reference to the death-rate, he would observe that when the percentage of deaths to the population was a great deal larger, all London, so to speak, lived in London, and now half of London lived in the country. Statistics of all kinds should, he thought, be taken *cum grano salis.*

Mr. Collins asked whether it was not the fact that, in many of the schemes referred to by Mr. Ryde, the railways were proposed to be carried under the public streets?

Mr. Ryde replied that such was the case. For instance, the Mid-London Railway began, so far as he recollected, somewhere near Hyde Park Corner, and was run under public streets until it got to Regent Circus, where his land esitmate commenced.

Mr. C. K. Bedells (Fellow) said he regarded the Paper as a suggestive one, but in this light only. Mr. Woodward's scheme disregarded many practical considerations which would greatly fetter the man who had to carry it out, such as differences in the levels, and the special cha-

racteristics of various localities. Each Member had probably looked at the plan with special reference to the particular locality in which he happened to be personally or officially interested. He had himself done so, and would just take Scheme No. 9, where it was proposed to widen out streets from Bedford Row to Holborn, and would also take the scheme where it was proposed to put a number of roads to and around Lincoln's Inn Fields. He was quite sure that those who occupied the houses in Bedford Row would not be particularly thankful for a broad way into Holborn; and Lincoln's Inn Fields would lose much of its present character if it were made a thoroughfare for heavy traffic, as it would be if the projected roads were carried out. As an illustration, he had before him Theobald's Road, which was comparatively a quiet road until the Metropolitan Board of Works made a new wide road from Hart Street to Clerkenwell Road. At this moment a large portion of heavy traffic went down that road. All the houses there overlooking Gray's Inn Gardens were formerly occupied, and some were still occupied, by firms of solicitors or for professional purposes, but some had now been to let for a couple of years, and could not be let for the reason that the road was now too noisy for the houses to be occupied by solicitors, and the covenants in the leases (which the estate refused to waive) permitted only this use of these houses. Therefore they were in this predicament that the houses were to be let for no other purpose than offices, and could not be let for offices owing to the entirely altered character of the street. He thought that this was one of a number of cases in which the Paper would require a great deal of consideration. His opinion in regard to this was that if a thoroughly good thoroughfare were made through Gray's Inn Road, and in continuation thereof from north to south, as shown on the plan, and another of the nature shown on the plan for

enlarging Little Queen Street, and in continuation thereof north and south to the Strand, that these—with Guildford Street and Theobald's Road and Holborn all running from west to east—would render this particular neighbourhood quite sufficiently accessible.

The same consideration applied to the Temple and to other places where the chief value consisted in their quietness, and in an absence of heavy and general traffic. He also noticed there were several schemes suggested which really were already in the course of accomplishment. Take, for instance, Covent Garden, which was not only under consideration, but in practical work in the widening of the roads communicating with Covent Garden Market, so as to improve the access and egress to and from the same. It was much the same in Charles Street and Great George Street, Bermondsey Street, &c.—many of these were now in progress.

He had noted, what Mr. Ryde very clearly pointed out, that, although the author mentioned in his Paper that there should be great ease in getting to and from railway stations, and great facilities for this traffic, the plan did not seem to thoroughly carry out that view; and his idea was that London might be greatly improved by seizing opportunities for the extension of railways—to take the Euston and the Midland Railways, for instance,—more into the centre of London, and that, by the Metropolitan Board of Works co-operating with the promoters and embracing such opportunities, many of these desirable streets might be formed. It seemed to him that the estimate was misleading in several respects. He was not able to say that on an average it might not be somewhere, roughly, near the mark. No one could tell at present; but he would say there were elements of cost which were not taken fairly into consideration.

If they looked at the plan, they could not fail to be struck with the fact how largely it diverted the main lines of

traffic from the courses (it might, perhaps, be inconvenient courses) they took at this moment. Under those old streets there were not only sewers, but mains for water and mains for gas. There was a Metropolis Management Act, which said that people were not to build over the course of any sewer. See what that involved! There would be areas over which people could not build unless they paid the enormous sums required to divert all the sewage and gas mains which required to be diverted. Another element of cost occurred to him. Wherever there was a clearance in a parish or a district, the remaining occupants had, for many years, perhaps, to pay a largely-increased sum in rates. The case of Theobald's Road was a case in point, where the rates of that particular parish have been unusually heavy, simply because half the houses that formerly stood there and contributed have been destroyed.

He also noted what had been already pointed out, the extreme inconvenience of the mode proposed for acquiring the properties required, *i.e.*, to purchase the freehold and not the leasehold interests; and another point he noticed, the suggestion, namely, that the State Department was to build certain houses and then not let them, except for a very limited time. He would ask any Surveyor present whether he would get any well-established and respectable firm to go into a set of buildings on less than a 20 years' lease? It would be found that where the tenure was so short, *i.e.*, where the leases were nearly running out, if one refused to renew them, one would turn out a most substantial class of tenants whom it would be very desirable to keep.

He also objected to the mode of doing away with all middlemen in the matter, for he thought it would lead to a good deal of jobbery. If it were left entirely to a State Department, in the absence of competition there would be room, at any rate, for unfair dealing.

Another point occurred to him, which was this. The scheme proposed was to take 30 years in accomplishment. Was it not very possible that both the buildings and the scheme might, by that time, become somewhat obsolete? There was a great change taking place in the trade of London and the mode of carrying it out. Thirty years ago there were Manchester warehousemen who held large stocks of Manchester goods on hand. Where were these now? They had disappeared, he believed, altogether. It seemed to him, that by the use of the telephone and the telegraph, and through the increasing facilities of railway communication, there might be vast changes in London in less than 30 years, and that some of the projects now thought to be desirable might be then found not to be so.

He had looked at the drawings, and he was not going into detail, for he thought he might well defer detail such as materials for road-making. Manufacturing and other businesses would probably, in the course of years, go out of London, and the area of London, in fact, would be very much extended.

One thing suggested itself to him. Mr. Ryde spoke of people living out of town. Perhaps if they were included in the census returns, it would make those returns appear more favourable than should be the case; but he thought he was right in saying that the census of London was taken *at night*, and did not, therefore, include the day population. It was desirable to bear that fact in mind. As to taxation, he thought they would find the taxes in London were deemed quite sufficiently high now. No doubt the scheme was very valuable as a suggestion, and he would add his measure of praise to Mr. Woodward for the extreme pains he had taken in the matter; yet he thought it must be regarded simply as a suggestion, and that it would be found that a more gradual and natural process would really accomplish

the purpose all had in view, namely, to make the capital city one worthy of the wealth and dignity of this country.

Mr. H. R. Williams (Visitor) congratulated the author on the pains he had bestowed upon the preparation of this elaborate Paper. He was himself neither an architect nor a surveyor; but, as the chairman of a local board in the north of London, he took the greatest possible interest in the various details given by Mr. Woodward. Like the previous speaker, he was struck with the absence of any mention of railways—an omission which seemed to him one of the greatest defects in the Paper.

He was struck also with the proposed extension of the London and St. Katharine's Docks, seeing that these docks were already too large for the purposes of the Port of London; and, so far from desiring increased accommodation, the shareholders would, he believed, be only too glad to abandon them if they saw a fair opportunity of saving their capital; for the tendency of docks at the present time was to go down the river, the great ships, built to go through the Suez Canal, being too large to traverse the Port of London.

He observed that the author put the coal-dues at something like £250,000 per annum. As a matter of fact, the amount which the Metropolitan Board of Works received from the coal-dues (according to their Report for 1884) was £300,000, which did not include the dues taken by the Corporation of London, which would bring up the aggregate amount to about £430,000. Mr. Woodward was for applying these dues to the purposes of his scheme, but he (Mr. Williams) laid claim to them for the multiplication and extension of open spaces and parks round the Metropolis, which could be done at a comparatively small cost if the spaces were acquired before the property reached a high building value. The author, by the way, had omitted some

of the open spaces which already existed. For instance, the 72 acres at Dulwich given by the Commissioners of the College, and the 23 acres lately bought by the Metropolitan Board of Works at an expense of £60,000 in the neighbourhood of Islington (Highbury Fields); 70 acres at Highgate, a Bill for which was now before Parliament; and 30 acres at Kilburn. He quite agreed with Mr. WOODWARD as to the importance of providing open spaces, but he held that they could be obtained in a far less costly manner than by clearing large areas in the midst of dense populations.

Mr. A. GARRARD (Fellow) thought Mr. WOODWARD was entitled to the thanks of the Members for the labour he had bestowed on his statistics, which could not fail to be useful for future reference; but, as to the scheme by which they were accompanied, he agreed with the previous speakers, that it was far too costly to be thought of, not to speak of the wholesale destruction of some of the finest buildings which, judging by the plans, would be necessary for its realisation. The Paper might, however, do good by leading the attention of the authorities to the consideration of some large and comprehensive general scheme of improvements towards which all intermediate improvements should be directed. If landowners and the Metropolitan Board would co-operate a little more, much might be done which was otherwise impossible, and which would result in great benefit to the community at large.

The absurdity of the present system of breaking up the streets, and the advantage of subways, had been referred to in energetic language by Mr. CHATFEILD CLARKE. There were many cases in which they might be constructed, but, as Mr. CLARKE had said, the difficulty was to get them used after they were made. Two years ago he designed a street for 70 houses in the west end of London, and provided a

subway beneath it, the officers of the Metropolitan Board giving him, as they always did, every information and assistance in their power. The gas company put their pipes into it, and provision was made for the water mains as required by the company's inspector, but when the water was wanted the company would not use the subway, and declined to give any reason officially, but it was stated that they did not like to put their water mains in the same channel with the gas mains. There was no power to compel them to do so, and the Metropolitan Board of Works were helpless in the matter. The present procedure was very unsatisfactory. Every time a house was built the road was broken up and the water was laid on to test the pipes, and then cut off. Directly the house was let the road was again taken up, and the water again laid on. What inducement was there to owners to effect improvements so long as they could be thwarted by a company in this way?

He considered that London was greatly indebted to the Metropolitan Board of Works for the many improvements they had effected, and he believed that the results of their operations, if carried on as heretofore, would be that many of the improvements suggested in the Paper might be eventually secured, without dealing with the whole of the large areas shown on the plans.

Mr. G. Lansdown (Fellow) pointed out, with reference to Mr. Woodward's proposal (page 250), that his new Department of Works should put up dwellings for the poorer classes, that he had apparently overlooked the cost involved in erecting artisans' dwellings, and which, judging by analogy, would swell very considerably his total-figure of 67 millions. On a former occasion Mr. R. Vigers quoted some figures, to which he might call attention, with reference to the cost of 6 sites for artisans' dwellings. Those figures

showed that 2¼ acres were acquired at a cost of £109,406. He might take that as entirely recouped for Metropolitan Board purposes. There were 3¾ acres taken for street improvements at a cost of £180,557. The cost of the remaining land, in round figures, was £450,000 for about 10¼ acres, but it was sold to the Peabody Trustees for, roughly, £100,000, showing a dead loss of £350,000 on the transaction.

The reason of the loss was that the Metropolitan Board were restricted by the Act to selling it for artisans' dwellings only, and he submitted that, to bring a scheme like this under discussion (he did not agree with the scheme itself) within the range of financial possibility, the stipulation that these sites must be dedicated for ever to artisans' dwellings must be abandoned. He did not know the total number of rooms built upon these sites by the Peabody Trustees. In one estate he acted in, 8,000 rooms were intended; but the plan was altered, mainly from fear of the effect of the restriction referred to, and only 4,000 rooms were built on it. This was between the years 1878 and 1882. If the 10¼ acres of land had been sold for commercial purposes, according to the published Report of the Metropolitan Board of Works, as quoted in the Report of the Charity Organisation Society for 1881 on the dwellings of the poor, it would have realised £496,694, or, roughly, £500,000, which would have yielded a profit of £50,000, instead of a loss of £350,000. Mr. Vigers' figures above referred to gave the price of the land used for street purposes by the Metropolitan Board of Works at £180,000; and deducting from it what he called "recoupment," £60,000, showed a net cost of £120,000 for the streets in question; and if the commercial principle had been applied in the case of the sites cleared for artisans' dwellings, instead of 15 acres only, a larger insanitary area of 105 acres might have been dealt with by the Board with no more loss to the ratepayers, and to the great benefit of the

health and comfort of the community; and as regarded the poor themselves, he believed that these restrictions had prevented the erection of a large number of improved dwellings for their occupation which would otherwise have been provided by private speculation.

In the case of the new street at Whitehall, the only outlay, he understood, was the cost of the public land on which the street stood. All the rest of the land was sold for commercial purposes, thus recouping the outlay completely. He thought, therefore, that Mr. Woodward had hardly taken credit for the large amount of recoupment for improved land, provided it were sold in the open market and free from such injurious restrictions as he had referred to.

Mr. Woodward, in reply, said that he had rather expected to have an opportunity of reading and carefully considering the points raised in the course of the discussion, but, as the debate had to be brought to a close that evening, he would do the best he could to answer objections in the short time at his disposal.

On the whole he was exceedingly gratified at the very careful attention the Members had given to the Paper. In working out this grand scheme he expected, of course, that it would receive considerable criticism, and, so far as he was concerned, the more criticism it received the better he was pleased, and the more likely was the discussion to be serviceable to those who might take up the question hereafter. To Mr. Collins and to Mr. Ryde he was more especially indebted for the detailed criticism they had given his Paper, and to the Council of the Institution he was exceedingly indebted for the liberal and rapid manner in which they had reproduced his Paper and drawings; and, even if the drawings should only be considered as practical suggestions for remodelling London, he was thankful that

those drawings would be found in the records of the Institution.

He feared that Mr. Collins had not quite appreciated his plan for one-roomed dwellings. It was for single men or women. There would be certain blocks for men and certain blocks for women; men and women would never be in the same block; and therefore those moral derelictions to which he referred could not occur. He agreed, however, with Mr. Collins that in the case of one-roomed dwellings such as existed in Glasgow his criticism would be fatal to the plan now proposed; but this was simply an improved lodging-house — one-roomed dwellings for men and one-roomed dwellings for women—and he had no idea of putting forward that plan as a scheme for one-roomed dwellings for families. He was aware that, according to death-rate statistics, London was the healthiest large city in the world; but could it not be made still healthier, still grander, and far more convenient than it is now, and, if so, why should not the good work be encouraged?

The Metropolis had fine parks, and he desired that instead of being shut in as now, those parks should be opened up; and this, they would find, had been carefully provided for in his plan.

As to the Metropolitan Board and the Corporation not giving up sufficient open space for the public, he did not refer to such spaces as Epping Forest, Burnham Beeches, Hampstead Heath, &c., but to those open spaces in connection with lines of building frontage where, for the sake of obtaining a paltry additional ground-rent, architectural effect had been ignored, thoroughfares cramped, and golden opportunities for ever lost. Take, for instance, Zion College on the Thames Embankment, which should clearly have been set back to the same frontage as the City of London School. The Corporation, however, in order to obtain a

little more ground-rent, had allowed the entrance to Zion College to come forward to the very line of the footway-pavement, to the detriment of that school, of the general effect of the line, and of the finest thoroughfare yet made by the Metropolitan Board.

Again, Mr. Collins had asked why should lessees pay £1 and ground-landlords £4? He would give as his reason that the lessees of houses were those who were most benefited by such improvements as he contemplated. Improved communication and attractiveness must improve the value of land in London. Therefore the lessees of houses in London who gained by those improvements should be the persons called upon to contribute. Having, then, secured a payment from the lessees, he went to the owners of the soil, and claimed that, as they were also benefited by the improvement, they should also contribute. The amount so levied would touch lightly the pockets of those expected to contribute, and by acquiring the amount of the coal and wine dues now received by the Metropolitan Board (which, he might here remark, was, as he had stated in his Paper, about £250,000 per annum), and obtaining rates from the companies using the subways, he could quietly carry on the work of improvement, which he had calculated would occupy thirty years. Then, as the State would be in possession of the freeholds acquired, and of all the value of the building frontages, reduction of taxation would be warranted, and those who had been compelled to contribute would indirectly receive back what they had paid.

He might here remark that although he had, in his Paper (p. 248), suggested that the whole country should, in some manner, proportionately contribute to the improvement of its Capital, he had, in his method of obtaining funds for the work, confined himself to the Metropolis.

With regard to the cost referred to by the late Lord

Mayor, for purchasing Lombard Street, he could only say that it was the statement of a layman, and he did not know whether or not it had any foundation beyond that. As to his (Mr. Woodward's) estimate of a million a mile, he might observe that it was an estimate based on the average cost of carrying out the street improvements in London, made by the Metropolitan Board of Works; and, taking one locality with another, he was decidedly of opinion that the one million sterling per mile would give him the thoroughfares he required, with the building frontages on either side, and enable him to construct the roads, sewers, and subways.

He could only say, in conclusion, that his great aim had been to make the scheme as practical as possible. He had spent many months in carefully working out the details,—even to the positions of lamp-posts and gullies. He had said that he had not an opportunity of studying the levels, and he was aware that difficulties of levels would occur in some of the streets he proposed, but they would be met as they had often been before. He thoroughly believed that, however much such a scheme as his might be considered premature and utopian, it would be found, very shortly, that some at least of the improvements he had suggested would be essential for the well-being of the Metropolis and the dwellers in it, and he ventured to predict that the longer they were delayed the more costly would they be and the more difficult to carry through.

The President said he had not the advantage of being present when the Paper was read, and had only recently returned from abroad, so that he had not been able to read it. He was not, therefore, in a position to discuss it, but he thought all would agree that it was a Paper of great interest, as had been abundantly proved by the excellent observations which had been made on the subject. He

thought he might infer that the feeling of the Meeting was, that however grand and comprehensive the scheme might be, it was one which could hardly be realised within a time that it was possible to estimate. The Institution was, nevertheless, under great obligation to the author for the labour bestowed upon the preparation of his Paper for the "Transactions."

The Meeting then adjourned.

Paper 137 }
No. 233 }

ON THE TAXATION OF REAL PROPERTY.

By WILLIAM MATHEWS (Fellow).

Read at the Ordinary General Meeting of The Surveyors' Institution, *Monday, March 22nd*, 1886.

THE PRESIDENT (MR. E. I'ANSON) IN THE CHAIR.

In a Paper read before the Institution on the 4th of May last, I described the nature and origin of rent, and examined the effect produced upon the various kinds of rent by taxes on real property, with the object of showing upon whom such taxes are ultimately incident. I propose this evening to consider how far the taxes at present imposed upon real property in this country are equitable, or the contrary, and to what extent the existing system is susceptible of amendment. As the conclusions which were established in the previous Paper are necessarily the foundation of any inquiry as to the justice or injustice of particular forms of taxation, it will be convenient to recapitulate them before proceeding with the argument.

They may be stated in the following terms:—

Rent, in the popular acceptation of the word, or as it may be called nominal rent, includes two elements—1st, real or differential rent; 2nd, interest on improvement outlay.

In agricultural rents, the first element may be called the land-rent, the second, the improvement-rent. At the margin of cultivation there is no land-rent: the nominal rent is the improvement-rent only.

In the rents of houses and other buildings, the first element is called the ground-rent, the second, the building-rent. If the land is at the building margin, the ground-rent is reduced to a sum just sufficient to induce the owner to divert the land from agriculture.

Taxes on the nominal rents of agricultural lands are, under existing conditions, ultimately incident on the owner, and press with extreme severity on land near the margin of cultivation. If the tax is imposed before the land is improved, it will condemn to sterility a zone of land within the margin of cultivation. If it is imposed after such improvement, it can, so far as that zone extends, only be provided by the confiscation of a part of the legitimate interest on the owner's outlay.

In considering the effect of taxes upon the rents of houses and other buildings, we must distinguish between taxes which are imposed prior to the erection of the buildings, and those which are imposed subsequently. We must also distinguish between taxes which are levied at the same rate throughout the kingdom, and taxes levied at rates peculiar to special localities.

1st. Taxes imposed prior to the erection of the buildings, and subject to which buildings are erected.

If the tax is uniform throughout the country, the tax on the ground-rent is incident on the ground-landlord; the tax on the building-rent is incident on the consumer in the case of a trade building, and on the occupier in the case of a dwelling-house.

If there are two areas, A and B, within competitive distance, and the rate of taxation in B is higher than that in A, the taxation in B may be divided into two parts, the rate prevailing in A and the excess above that rate. The first part will follow the previous rule, the second part will be entirely incident on the ground-landlord. The effect will

be to condemn to inactivity a zone of land within the margin of the area B. When the land values rise sufficiently to enable buildings to be erected, the tax will swallow up all but a small fraction of the ground-rent. At a further stage it absorbs half of it, and as the land values rise the incidence of the tax decreases.

2nd. Taxes imposed after the buildings are erected.

If the tax is uniform throughout the country, the tax on the ground-rent is incident on the ground-landlord. The tax on the building-rent, in the case of a trade building, must either be paid by the consumer, or lower profits and wages, or reduce the value of the building. In the case of houses, the tax on the building-rent will be borne by the occupier. If it is very burdensome, every occupier will seek relief by moving into a smaller house. The result will be an increased demand for houses of the lowest value, a decreased demand for the remainder. Houses of the lowest value will rise in price until a sufficient number have been built to satisfy the demand for them. The remainder will be in excess of the demand, and will fall in value.

If the tax is levied at a rate peculiar to a special locality, the uniform part will follow the previous rule ; the differential part will be incident entirely on the ground-landlord.

In either case, if the land has been let to a lessee at a fixed ground-rent, previously to the imposition of the tax, the tax on the ground-rent must be paid by the lessee out of the building-rent, until the value of the land has risen sufficiently to cover the amount of the tax.

These are the fundamental propositions relating to the incidence of taxes on real property. Before any conclusions can be drawn from them, we must agree upon the conditions which a system of taxation should fulfil in order that it may be equitable as between the contributories, and press with the least inconvenience upon the community. We may

content ourselves with accepting the four celebrated maxims of Adam Smith,* maxims, which as Mill remarks,† may be said to have become classical.

I quote the essential parts of each of these maxims.

I. "The subjects of every state ought to contribute "towards the support of the government, as nearly as "possible, in proportion to their respective abilities; that is, "in proportion to the revenue which they respectively enjoy "under the protection of the state."

II. "The tax which each individual is bound to pay "ought to be certain, and not arbitrary. The time of pay- "ment, the manner of payment, the quantity to be paid, "ought all to be clear and plain to the contributor, and to "every other person."

III. "Every tax ought to be levied at the time, or in the "manner in which it is most likely to be convenient to the "contributor to pay it."

IV. "Every tax ought to be so contrived as both to "take out and to keep out of the pockets of the people as "little as possible over and above what it brings in to the "public treasury of the state."

The premisses which form the basis of our inquiry having, as I trust, been admitted, we may proceed to the consideration of the various taxes by which real property is affected. First in importance are those included under the head of "Local Taxation" which affect real property exclusively.

The history of these taxes in England and Wales, and of their progressive increase in the present century, is contained in two blue-books, the most important contributions which have yet been made to the literature of local taxation. The first of these is the "Report of the Poor Law Commissioners"

* "Wealth of Nations," bk. v., ch. ii., pt. 2.

† "Pol. Econ.," bk. v., ch. ii., sect. 1.

with appendices, dated the 1st June, 1843, addressed to Sir James Graham, the then Home Secretary. This report enumerates twenty-four distinct varieties of local rates; describes their introduction and progress, their purposes and applications, the amount of money raised, the property affected, the principles of assessment, the districts in which they are levied, the process of making and collecting the rates, the method of keeping the accounts, and, finally, the officers charged with the execution of the law, of whom, at that date, no fewer than 180,000 were in office at the same time. The report concludes with some excellent practical suggestions, many of which have been carried into effect. The first appendix contains a valuable digest of the whole statute and case law relating to the subject, with tables of 173 Acts of Parliament and 235 judgments in which the law was embodied.

The second is the report, dated March 1871, of the Right Hon. G. J. Goschen, President of the Poor Law Board, to the Lords Commissioners of Her Majesty's Treasury, on the progressive increase of local taxation, commonly known as Mr. Goschen's report. It forms the sequel to the report of a Committee of the House of Commons, of which Mr. Goschen was chairman, appointed in 1870 to inquire into the expediency of dividing the local charges between owners and occupiers, and which reported in favour of such division. The ratepayers asserted that their burdens were increasing; Mr. Goschen assures them, on statistical grounds, that they are mistaken. It is a trite remark that any conclusion we please may be drawn from statistics if they are skilfully handled. In the present instance, it is not so much the skill as the simplicity of the calculations which commands our admiration. The receipts from rates and the valuations of the properties upon which they were levied are given, in the returns, at certain intervals

from the year 1803. Mr. Goschen divides the one by the other, and thus obtains a fraction of a pound, which he assumes to be that at which the rates were levied. He concludes that, so far, at all events, as agricultural lands are concerned, the burdens on them were increasing less rapidly than the values of the properties assessed. It is obvious that, if we wish to raise £1,000 on an assessment of £20,000, the rate must be levied at more than 1*s.* in the pound. Allowances must be made for losses, voids, and the reductions on compound houses, and, in the case of the general district rate, for the fact that it is levied at one-fourth only on agricultural lands, railways, and canals. I have had the curiosity to ascertain for the parish of Birmingham the difference between the rates as actually levied and what they would be on Mr. Goschen's system of calculation. For every shilling levied on the ratepayers, the poor-rate yields 10*d.*, and the improvement-rate 9*d.* in the pound, on the whole rateable value. Taking all the rates together, a six-and-eightpenny rate yields only 5*s.* 4*d.* Mr. Goschen would say that the rates in Birmingham are only 5*s.* 4*d.* in the pound; the ratepayers know that they are 6*s.* 8*d.** If we could be sure that the percentage of error is constant, the reasoning would not be affected, but we can have no confidence that such is the case. Yet the calculated values of the fraction of the pound are tabulated throughout Mr. Goschen's report, and have been reproduced in subsequent publications without the slightest warning that they are imaginary quantities. Moreover, it is necessary to the validity of the argument that the valuation lists at the epochs selected for comparison should have represented accurately the values of the properties assessed. It is notorious that the assessments were formerly low, and that

* They were 6*s.* 10*d.* in 1885.

they have been growing more rapidly than the values of the properties assessed. A local authority, previously content with 2*s.* 6*d.* in the pound, wishes to levy an additional 3*d.* To avoid the appearance of raising the rate, it instructs its Surveyor to revalue the parish, and to screw up the assessments 10 per cent. It is idle to tell a ratepayer who has felt the turn of the rack that he is still paying only 2*s.* 6*d.* in the pound.

So far as the increasing pressure of local taxation is concerned, and restricting myself to the last 50 years, I must be permitted to express my opinion that the question remains very much as it was before Mr. Goschen examined it. In all other respects it is impossible to estimate too highly the merits of the report. It contains the most complete body of statistics relating to local taxation and expenditure that has ever been laid before the public, and information of the greatest value upon local taxation in other European countries.

In addition to the two blue-books of 1843 and 1870-1871, the two Taylor prize essays by Mr. R. H. Inglis Palgrave and Mr. John Scott, communicated to the Statistical Society in 1871, may be consulted with advantage.* Mr. Palgrave describes the situation in the following words:—"These taxes are at present so high that they amount to more than a third of the taxation imposed for the general purposes of the Government, those imposts which for the sake of clearness may be best termed imperial taxes, while the expenditure, including the amounts raised by loans, is nearly the half of that of the central authorities."

If the magnitude of our local taxation impressed Mr. Palgrave in 1870, its subsequent growth and present dimensions are even more startling. The "Statistical Abstract

* Journal Stat. Soc., 1871, vol. xxxiv.

for the United Kingdom" for the 15 years from 1870 to 1884* ought to afford a ready means of tracing its increase in the 14 years' interval. The returns, however, are defective in many particulars, and do not admit of the figures being given with exactitude. The local-taxation returns are always one year behind those of the imperial exchequer. The amount expended by local authorities is given for each division of the United Kingdom, but the amount raised by rates is given for England and Wales only. Supplying the omissions by fairly approximate estimates we obtain the following instructive parallel:—

	Imp. Exp.	Local Exp.	Amount raised by Rates.
	£	£	£
1870	67,111,464	abt. 36,000,000	abt. 20,000,000
1884	85,954,564	63,529,481 (1882-3)	abt. 30,000,000

It appears that contrasting 1884 with 1870 the imperial expenditure has increased 28 per cent., the local expenditure 76 per cent., and the local rates 50 per cent. The increase of population in the same interval has been 16 per cent.

If we wish exact figures, we must restrict our inquiry to England and Wales, and omit the comparison with the imperial taxation. The statistical abstract for 1884 gives us a table of the local rates in England and Wales for each of the twelve years from 1870-1 to 1882-3, and of the valuations of the property assessed. The following are the figures for the first and last years of the interval:—

Year ending Lady-day.	Gross estimated Rental.	Rateable Value.	Rates levied.
	£	£	£
1871	126,473,924	107,398,242	17,020,582
1883	167,449,369	141,407,686	24,869,140

They show that during the 12 years ending Lady-day

* 32nd No.

1883, the increase in the assessments has been 34 millions, or nearly 32 per cent., and in the rates levied 8 millions, or 47 per cent., as against an increase in the population of 4 millions, or 17 per cent.

It is interesting to compare these figures with those of an earlier date. In the first 25 years of the century the rates were comparatively high. They reached a minimum value in the £ in 1841, when they were £8,550,000 on a rateable value of £62,540,030.* Thus the increase was, in round figures, 8 millions in the 30 years from 1841 to 1871, and 8 millions more in the 12 years from 1871 to 1883.

These facts may be exhibited from two different points of view—

I.

	Rateable Value.	Rates levied.	Cal. Fraction of the £.
	£	£	
1841	62,540,030	8,550,000	2*s.* 9*d.*
1871	107,398,242	17,020,582	3*s.* 2*d.*
1883	141,407,686	24,869,140	3*s.* 6*d.*

II.

	Population.	Rates levied.	Amount per Head.
		£	
1841	15,706,741	8,550,000	10*s.* 10*d.*
1871	22,760,359	17,020,582	14*s.* 11*d.*
1883	26,770,744	24,869,140	18*s.* 2*d.*

The first set of figures conveys a useful lesson as to the caution which should be exercised in drawing conclusions from statistical tables. The fractions of the £ are calculated on the principle adopted by Mr. Goschen, and are infected by the errors already pointed out. It is not to be supposed

* Mr. Goschen's Report, pp. 18, 77.

that the rates levied in England and Wales for the year ending at Lady-day 1883 averaged only 3*s.* 6*d.* in the £, or that an addition to the rates of 8 millions a year in the 12 years from 1871 to 1883 is represented by an addition of 4*d.* only to the value in the £.

It will be convenient to examine the local taxation of real property in England and Wales in the order in which such property is distinguished in the income-tax returns. The classification, which is not altogether satisfactory, is made under the following heads:—

1. Land.
2. Houses and other buildings.
3. Mines.
4. Ironworks.
5. Railways.
6. Canals, docks, gasworks, quarries, waterworks, and sundries.

(1) Land.

It is not easy to determine the average value in the pound of the rates on agricultural land. It appears from the local-taxation returns that, in the year ending Lady-day 1883, the property assessed had a gross estimated rental of 167·4 millions; a rateable value of 141·4 millions. The gross rental of the agricultural lands is shown by the income-tax returns to have been 48·4 millions, which would represent a rateable value of about 46 millions; or, in round figures, a third of that of the whole of the real property. The amount raised by rates was 25 millions, one-third of which would be 8 millions. As houses and real property other than lands are generally situated in areas of relatively high taxation, the rates on agricultural lands would be somewhat less than that proportion. If we take them at 5 millions only, they would represent a tax of upwards of 2*s.* in the pound. This is certainly a low estimate.

In the parishes with which I am personally connected, the rates average nearly 3*s.* in the pound.

It has been shown that the rates on agricultural land are ultimately incident on the owner. According to the first maxim of Adam Smith, every citizen should contribute in proportion to his ability. Why should a landowner with an income of £1,000 a year pay £100 a year for a tax in respect of which a trader, a fundholder, or a mortgagee escapes scot-free?

It is a fact, not so generally known as it deserves to be, that the Act of the 43rd of Elizabeth,* by which parochial rates were first imposed, did not accord to personal property that immunity from local taxation which it now enjoys. The Act provides that the overseers of any parish shall "raise, weekly or otherwise, by taxation of every inhabitant parson vicar and other, and of every occupier of lands, houses, tithes impropriate, propriations of tithes, coal mines or saleable underwoods in the said parish, in such competent sum or sums of money as they shall think fit, a convenient stock of flax, hemp, wool, thread, iron and other necessary ware and stuff to set the poor on work: and also competent sums of money for and towards the necessary relief of the lame, impotent, old, blind, and such other among them being poor and unable to work, and also for the putting out of such children to be apprentices, to be gathered out of the same parish according to the ability of the same parish, and to do and execute all other things, as well for the disposing of the said stock as otherwise concerning the premises as to them shall seem convenient."

It is evident from this language that the intention was, first, that the inhabitants of every parish should contribute according to their ability; secondly, that the occupiers of

* Ch. II., 1601.

certain descriptions of property should contribute, whether they were inhabitants or not.

Although the principle of the liability of personal property to contribute its quota to the poor-rate was established by the Act of Elizabeth and the legal decisions thereon, no uniform system of assessing such property has ever prevailed. In many parishes it altogether escaped assessment. Where such was not the case, stock-in-trade and money lent at interest appear to have been the only description of personal property assessed, and these only at a small fraction of their real value.* The Parochial Assessment Act, 6 & 7 Wm. IV., c. 96, passed for the purpose of establishing a uniform system of assessment, is silent on the question of personalty and as regards realty only increased the previous confusion. The question whether this Act released personalty from assessment was decided in 1839 by the Court of Queen's Bench in the case of *The Queen* v. *George Lumsden.*† It was held, by the unanimous decision of Chief Justice DENMAN and Justices LITTLEDALE, PATTESON, and COLERIDGE, that the rateability of personalty, which was unquestionably created by the 43rd of Elizabeth, was unaffected by the 6 & 7 of Wm. IV.

Upon this decision the Legislature displayed its proverbial wisdom, in a very characteristic way, by the passing of the Stock-in-trade Exemption Act, 3rd and 4th Victoria, ch. 89, 1840. This statute, after reciting the rating section of the Act of Elizabeth and the ruling of the Court of Queen's Bench, and preserving the liability of the occupiers of the usual rateable hereditaments, provides that "it shall not be lawful "for the overseers of any parish, township, or village, to tax "any inhabitant thereof, as such inhabitant, in respect of

* See "Report of the Poor Law Commissioners on Local Taxation," 1843, p. 29.

† "Law Journal Reports," vol. xvii.

" his ability derived from the profits of stock-in-trade or any " other property ;" and further, that the Act shall be in force till the 31st December, 1841, and that from and after that date its provisions " shall absolutely cease and be of no " effect." Since the year 1840 this statute has been periodically re-enacted. Its last re-enactment was by inclusion in the " Expiring Laws Continuance Act," 48th and 49th Victoria, 1885, ch. 59, by which it remains in force until 31st December, 1886.

To the question already put, one still more pertinent must now be added. Why should the Stock-in-trade Exemption Act be re-enacted ?—on what grounds of reason or justice should the inhabitants of a parish, as such, be relieved for a further period of twelve months from contributing to local taxation in accordance with their ability derived from the profits of personal property ?

Most persons, I imagine, would answer this question in some such manner as the following :—" Rent is an income derived by the owner of land, not in consequence of his own exertions, but as a necessary incident in the growth of population. It is only reasonable that a portion of that income should be devoted to the support of the poor, and other purposes of a like nature, the necessity for which arises from the same causes as those by which the income itself has been created." If the tax were levied on the land-rents only, the reasoning would be unimpeachable. If such a principle were now to be introduced it would be necessary to deduct from every assessment the value of the landlord's improvements and to levy the tax on the remainder. This would lead to insuperable difficulties in the preparation of the valuation lists. Another obstacle to its adoption is even more formidable. There are at the present moment hundreds of parishes in which, if the improvement interest were deducted from the assessments, there would be nothing left to assess.

Parochial rates are, and must continue to be, levied on the nominal rents; the result is that capital employed in the improvement of land is subject to an onerous impost, from which capital employed in other industries is comparatively free. This is a great anomaly, and must be justified, if justified it can be, on some other grounds than the one above suggested.

Its justification is that it has prevailed, in a greater or less degree, since the time of ELIZABETH, and that prices have gradually adjusted themselves to it. Buildings have been erected and lands improved, properties have been bought, sold, and inherited, subject to their existing liability to local taxation.

These considerations, although they may be held to excuse a logically vicious principle, are no justification for the practice which has long prevailed of throwing fresh charges on the rates. If all properties were rising in value to the same extent as the growth of the burdens upon them, no substantial injustice would be done to the owners. But where such is not the case, every new charge, causing, as it ultimately must, an equivalent reduction in the net income, is an absolute confiscation of a part of the capital value of the property to which it relates. A purchaser would buy a smaller income, the purchase-money of which would be reduced in the same proportion as the income itself.

It will be convenient, at this point, to take into account a very important circumstance in the incidence of varying taxation. When we say that rates on agricultural lands are ultimately incident on the owner, it is necessary to lay stress on the word *ultimately*. Owners, as a rule, part with the possession of their property for periods varying from the term of a long lease to that of an annual tenancy. Whatever the term may be, the tenant, as long as it lasts, stands in the position of the landlord. He makes his bargain on entering upon his holding, and agrees to pay a rent founded on the

existing scale of taxation. If the scale be raised, the loss, whatever it may be, must be borne by the tenant until he is legally able to release himself from the burden. Even then he will not necessarily escape. If you lay a brick on a horizontal slab of stone, and raise the slab about one of its edges, the brick will not slide downwards until the inclination is sufficient to overcome the resistance of friction. Just so it is with a tenant under gradually-increasing taxation. It is not until the increase in his payments becomes a greater evil than the expense and inconvenience of quitting that he can make an effective demand for a reduction in his rent. If, however, the tenancy ceases from some other cause than the will of the tenant, the rent will necessarily fall.

Difficult as it is to ascertain with precision the relative increase of local burdens on real property, it is still less easy to disentangle from the general average the figures relating to agricultural lands. The gross annual value of these lands in 1871 was 48·9 millions. In 1877 it rose to nearly 52 millions; but in 1883 it sank to 48·4 millions. It must not be imagined that the landowner was in the same position in 1883 that he was in 1871. A vast outlay had been made in the interval in every description of permanent improvement, the whole interest upon which has been swept into the abyss of agricultural depression. If we analyse the increase of 8 millions in the general local taxation for the interval between 1871 and 1883 we find it to consist of the following principal items :—

School Boards	£1,800,000
Borough Rates	350,000
Vestries or District Boards . .	500,000
Urban Sanitary Authorities . .	3,750,000
Rural do.	350,000
Highway Boards	450,000
	£7,200,000

Assuming that 1·2 millions only of this increase has fallen on agricultural lands, it would represent, on a rateable value of 46 millions, a tax of 6*d.* in the £.

Among the new burdens which have been imposed upon land within the last few years, the most important are those in respect of turnpike roads, board schools, and what is called sanitation. The turnpike roads were formerly managed by competent surveyors, and kept in excellent condition at the cost of the persons who used them. They are now, so far as they are included within the limits of country parishes, generally managed by farmers, and many of them are among the worst maintained in Europe. In 1868, the entire expenditure of the Turnpike Trusts was a little over £1,000,000, of which £720,000 was expended in maintaining the roads.* In 1882, the expenditure on the disturnpiked roads in the rural districts alone was £576,000, of which £108,000 was contributed by the Treasury, leaving £468,000 as an additional charge upon the rates. The cost of the roads under unexpired trusts, exclusive of repayments of debt, for the same year was about £100,000, three-fourths of which will ultimately be thrown upon the rates.†

Considering the benefit which land derives from good means of communication, the justice of placing this charge upon the owners may be a matter of argument. There can scarcely be two opinions as to the injustice of charging them with the largest part of the cost of primary education. The sanitary rate is charged upon land at one-fourth only of the rateable value. It would be interesting to know by what mental process the Legislature arrived at this proportion. Whatever may be thought of the value of modern sanitary measures as applied to houses, it cannot be imagined that a

* Mr. Goschen's Report, Appendix A, p. 45.

† "Local Taxation Returns" 1882-3, pp. 416-7, 422-3.

field of wheat or of swedes derives the smallest advantage from them. This impost may be cited as an instance of the prevailing tendency to tax land for the benefit of houses. A still more striking one is afforded by the Union Chargeability Act, 1865,* under the provisions of which, each parish which formerly maintained its own poor was made to contribute to the maintenance of the poor of all the parishes in the union. The cruel injustice which this Act inflicted in particular cases, and which is inseparable from every variation in the incidence of taxation, is shown by the evidence of our Member, Mr. Squarey, given before Mr. Goschen's Committee in 1870.† Mr. Squarey held a farm on a 16 years' lease, and his rates were raised by the operation of the Act from £70 to £170 a year.

(2) Houses and other Buildings.

Building property differs from agricultural land, with reference to taxation, in the fact that there is generally a portion of the tax which does not fall upon the owner. As it is usually situated in areas of relatively high taxation, I shall confine my remarks upon it to such areas, in other words, to our great municipal boroughs. If we assume that the rate of taxation within them is twice that of competitive areas outside, and that the average ground-rent is one-fourth of the nominal rent, then, since the ground-landlord pays the whole tax on the ground-rent and the differential tax on the building-rent, his share of the tax will be—

$$\frac{1}{4} + \frac{1}{2} \cdot \frac{3}{4}, \text{ or } \frac{5}{8} \text{ of the whole.}$$

The remainder will fall on the occupier or consumer. This rule applies only to buildings erected subject to an existing tax. If an existing tax is raised or a new tax imposed after

* 28 & 29 Vict., ch. 70. † "Minutes of Evidence," p. 149.

their erection, there will generally be an additional burden on the owner, or the person who for the time being stands in his position.

The annual value of building property in England and Wales, in the year ending Lady-day 1871, appears from the income-tax returns to have been 75·4 millions; for the year ending Lady-day 1883, to have been 109·4 millions, an increase of 34 millions, or 45 per cent. The difference is extraordinary. As the increase in the population in the same interval was only 17 per cent., it is difficult to resist the conclusion that some other causes than the natural increase of buildings must have contributed to the rise in the assessments. If we deduct 20 per cent. from the income-tax returns to obtain the rateable value of the buildings, we obtain the following comparison between land and buildings for the years ending at Lady-day 1871 and 1883, respectively—

	Land.	Buildings.
1871	46 millions.	60 millions.
1883	46 „	87 „

As the general increase of local taxation has been 47 per cent., compared with an increase of 45 per cent. in the rateable value of buildings, it would not appear at first sight that there has been any great advance in the taxation of this kind of property.

Those of us who enjoy the privilege of citizenship in very progressive municipalities are well aware how wide of the truth such a conclusion would be. In my own borough, the total rates levied by the town council were, in 1871, 3*s.* 3*d.*; in 1885, 4*s.* 5*d.* in the £. Increase in 14 years, 1*s.* 2*d.* in the £, or 36 per cent. Of this increase, the school board rate accounts for 8*d.*, the drainage rate for 3½*d.*, the free library rate for nearly 2*d.* Moreover, these rates are "precept rates," levied by a poundage on the total assessment for the poor-rate. They represent a charge on the ratepayers of

20 per cent. more than the nominal amount of the rate. If, instead of the increase in the £, we look at the increase per head of the population, the figures are astounding. In the year 1870, the total municipal rates were 8*s.* 3½*d.* per head; in 1884, they were 15*s.** This increase, enormous as it is, does not represent the whole growth of the municipal taxation. During the last fourteen years the Treasury subventions towards various branches of expenditure have been largely increased. In 1876 the gasworks were purchased by the corporation, and the gas committee appropriated, out of its profits, £25,000 a year towards the general expenses of the borough. "Without these "aids the cost of the work of the corporation would "have demanded from the ratepayers in recent years "from £40,000 to £50,000 more than has been actually "levied in rates."† It may safely be said that the Birmingham municipal expenditure, so far as it is provided for by the rates, has, per head of population, doubled since 1870. It is not probable that the progress of other boroughs in the same direction has been much less rapid than that of Birmingham.

The increase in the rates, per head of population, does not present a complete picture of the growth of municipal expenditure. In addition to that which is thrown upon the rates, a large outlay is provided for by loans. The total indebtedness of the various local authorities is advancing with gigantic strides. In 1877 it was 106 millions; in 1883, 159 millions. It is now increasing at the rate of ten millions a year, and the charge for interest and sinking fund in the year ending Lady-day 1883 was ten millions.‡ Much

* "History of the Corporation of Birmingham," J. T. Bunce, vol. ii., p. 55.

† Ib., p. 49.

‡ "Local Taxation Returns," 1882-3, tables i. ii., pp. vi., vii., viii.

of this expenditure is in respect of the purchase of gas and water undertakings and other productive works. There remains, nevertheless, a very considerable margin representing works producing no income and sometimes of doubtful utility.

It may possibly be asked, How is it that the ratepayers make no effort to arrest the constant growth of local expenditure? I answer that, in most boroughs, the real ratepayers are powerless. Their representatives are elected, on political grounds, by constituencies in which the compound householder exercises an overwhelming influence. The assessments on the houses which he inhabits are made directly on the landlord, the tenant is not even the vehicle of payment. So long as the increase in the rates is differential, it must be borne by the owner; any attempt on his part to recoup himself by raising his rents would be followed by the migration of the tenants into the suburbs. It is possible that a time will come when the suburban taxation will rise sufficiently to prevent this result. In such event, the municipalities will be expected to provide artisans' dwellings at less than their market value, or, to use an equivalent expression, which, like Adam Smith's maxims on taxation, "may be said to have become classical," *at a fair rent.*

(3, 4, 5, 6) Mines, Ironworks, Railways, Canals, Docks, Gasworks, Waterworks, and Sundries.

I have very little time at my disposal to treat of the remaining items of rateable property. I cannot even touch upon the question of whether a mine with a limited life should be assessed on the same principles as if it were perpetual. There is, however, one feature connected with the rating of railways, canals, waterworks, and gasworks which must be briefly noticed. They are the only trade

undertakings which are assessed upon the basis of their profits. If the principle is a just one, one fails to see why it should not be extended to other trades, and why a banking company, for instance, should not pay upon the profits which it makes, and not merely upon the value of the premises it occupies.

There are two taxes affecting real property upon which I wish to say a few words before passing to the concluding part of this essay. I mean the succession-duty and the income-tax.

The taxation of inheritances has been condemned in principle by some of our leading economists. "It should "be the policy of governments," wrote David Ricardo, "never to lay such taxes as will inevitably fall on capital, "since by so doing they impair the funds for the maintenance of labour, and thereby diminish the future production of the country. In England this policy has been "neglected in taxing the probates of wills, in legacy-duty, "and in all taxes affecting the transference of property from "the dead to the living."* Whatever value may be attached to this opinion (and it has been disputed by Mill and other writers), taxes on inheritances are subject to other objections which are beyond question. They do not fall on property held in mortmain, and are easily evaded by rich persons, of whom many make in their lifetime large gifts to their children or immediate relatives. A further and very serious objection is their violation of the fourth axiom of Adam Smith, according to which every tax ought to be so contrived as to take out of the pockets of the people as little as possible over and above what it brings in to the public treasury of the State. The first necessity of an inheritor is to place his affairs in the hands of a solicitor, to whom he pays a heavy toll, in addition to that exacted by the State.

* "Principles of Political Economy and Taxation," chap. viii.

Taxes on successions to real property are more pernicious than those levied on personalty. There are special evils attaching to them from which the latter are exempt. If a man inherits £1,000 in the funds, he may give up £100 of it without depreciating the remainder, but with land this is not the case. In a properly-ordered farm, the farmstead has a character and position related to the area of the farm; on a properly-ordered estate, the mansion has a character and position related to the area of the estate. Lopping a slice from a farm, or a farm from an estate, is like lopping a limb from an organic structure. A successor inherits a landed property. It must be a very unusual one if the margin of available income, after providing for maintenance and management, is more than sufficient to keep himself and his family in reasonable comfort. He is called upon to pay succession-duty. He is naturally disinclined to sever his patrimony, nor could he do so without grievous injury to the value of the remainder. Perhaps he raises the succession-duty on mortgage, paying, at the same time, procuration fees and legal expenses. In any event, he curtails the expenditure necessary for maintaining the property, and thereby inflicts discomfort and hardship upon all his tenants.

The succession-duties were first imposed in 1853 by the 16th and 17th Vict., c. 51. I have not ascertained what probate and legacy duties produced at that date; it was certainly very far less than that raised by the local taxation of land.

Many descriptions of personalty were exempt from local taxation, the legal liability of the remainder was held in suspense by the continuous re-enactment of the "Stock-in-Trade Exemption Act." No fair-minded person can suppose that the scales of taxation were inequitably balanced by the exemption of realty from duties on inheritance. Now, consider

the effect of imposing these duties. Realty when sold is purchased with personalty; at any given time a certain quantity of realty is in demand for an equivalent value in personalty. By putting a new tax on realty you reduce its value by the capitalised amount of the tax. You take a sum of many millions sterling from those members of the community who happen to be, at the time, possessors of real property.

The succession-duty was tempered to the landowners by an ingenious artifice. A legatee pays duty on the full value of his legacy, but a successor on the value of his life-interest only. In the case of the most favourable life, the value of the life-interest does not exceed two-thirds of the value of the perpetuity. The principle of the taxation of successions is secured, an inequality with personalty still remains, a standing invitation to a further inroad on the capital value of realty.

The maxim that "each taxpayer should contribute in proportion to the revenue which he enjoys, under the protection of the State," appears to have had very little influence in determining the principle of assessment to the income-tax. The revenue yielded by any property is the gross income received from it, less the cost of maintaining it in a condition to produce that income. It is upon the net value and not upon the gross rental that assessments are made for the purposes of local taxation. With the income-tax this is not the case. The owner of a house, or of a landed estate, is taxed upon the gross rental, without any allowance for the cost of maintenance. If an owner lets a house to a tenant who covenants to keep it in repair, he pays, it is true, only on the rent which he receives from it, but the tenant is taxed on the outlay which he makes in maintaining the property. A house with a gross rent of £100 a year would produce, with the usual allowance

of 20 per cent., a net income of £80, and would pay 25 per cent. more than its fair contribution to the expenses of the Government. The owner of a landed estate is still more heavily burdened. There are many such, whose properties are unencumbered, and whose available income, after paying the cost of maintenance and management, does not exceed one-half of the gross rental. Their contribution in income-tax is twice as great as it would be if they received the same income in ground-rents.

The continual increase in the burdens of local taxation in England and Wales has given rise to various devices for mitigating the pressure on the ratepayers. It has been proposed to assimilate the English to the Irish and Scotch systems. In the former, the poor-rate is levied on the occupier, who is allowed one-half of it by the owner. In the latter, the poor-rate is levied, in two equal moieties, on owners and occupiers, and collected separately from each. The county rates are levied on the owners only; but as to part of the assessment, the landlord is entitled to recover one-half from the tenant.* If any person supposes that these arrangements affect the ultimate incidence of the tax he is mistaken. Their only advantage is to diminish the loss to the tenant when any given tax is raised, until the rent can adjust itself to the altered conditions. The same result could be obtained by arrangements of less complexity.

Another device, which is assuming a very important part in our fiscal system, is that of subventions from the imperial exchequer. A familiar instance of it is the Government grant in aid of elementary education. The objections to it are that it involves the principle of dual control, and affords an additional incentive to extravagance. It has reached a climax of absurdity in the present arrange-

* Scott, Second Taylor Prize Essay, "Jour. Stat. Soc.," 1871, vol. xxxiv., pp. 304-307.

ments for the maintenance of the disturnpiked roads. These are kept in repair by the parishes, and inspected by the county authorities. If the latter are satisfied, they make the parishes a grant-in-aid to the extent of three-fourths of the outlay, and receive from the Treasury a subvention of one-third of the grant.

I shall now venture to submit to your consideration the leading principles upon which, in my judgment, any reforms should be founded.

1. That the owners of property, upon whom so large a proportion of the local taxes are ultimately incident, should have an equitable share in the election of those who levy the taxes and administer their expenditure.

2. That some of the taxes should be levied on the landlord, others on the tenant. The division of the same tax seems to me a clumsy expedient. The county rate might with great advantage be levied on the landlord, and the maintenance of the main roads thrown entirely upon it. In other areas, all those taxes which are levied for purposes contributing directly to the improvement of property, such as the sanitary-rate, street-rate, and improvement-rate, should be charged upon the landlord, subject to proper regulations for preventing injustice as between lessor and lessee.

3. In every taxable area there should be one valuation list only, for all purposes of taxation, whether local or imperial. The present iniquitous system of charging income-tax on the gross rentals should be abandoned. The tax should be levied on the rateable values, as set forth in the valuation lists.

4. The assessment of personalty for local purposes would, no doubt, be attended with difficulties. There is no reason to think that they would prove insuperable. A large amount of property of this description, producing profit,

escapes all contribution to local taxation. It is difficult to see on what ground of reason or justice it should continue exempted. In the United States of America realty and personalty are both assessed to the State, County and City taxes. The assessments are made on the capital, not on the annual, value, a method of assessment which avoids many of the inequalities of the English system.

However important the reform of local taxation may be, it would be sanguine to expect that the question is one likely to receive equitable consideration at the present time. It would be folly to shut our eyes to the fact that it is not so much to the better adjustment of existing burdens as to resisting the imposition of new ones that our energies must be directed. The last report of the Local Taxation Committee has a formidable list of the Bills introduced into Parliament since 1870, containing provisions for placing new charges on the rates. Many of these were defeated by the activity of the Committee, but they were of quite infinitesimal importance compared with the schemes affecting real property now floating in the air. The maxim that every citizen should be protected in the enjoyment of that which he has acquired by purchase or inheritance, in accordance with the laws, is no longer regarded as a fundamental axiom of public morality. The result is a feeling of distrust in the security of property, which has contributed in no small degree to the present ruinous depreciation in the value of land, and must ultimately affect all industrial enterprise.

Mr. E. Ryde (Past-President) moved a vote of thanks to Mr. Mathews for his very exhaustive Paper.

Mr. Mathews had asked the question, what is rent? and proceeded to subdivide rent into several component parts, namely, land-rent and improvement-rent. He (Mr. Ryde) would disregard this subdivision, and would regard

the real rent of agricultural land as that sum which the land might reasonably be expected to let for, whether it was 40*s.* or 30*s.* or 20*s.* or (as it was likely to be in these times) 10*s.* an acre. In like manner the rent of a dwelling-house was the sum which could be obtained for it, including the ground-rent which as soon as the house was built became merged in the rent of the house.

If landed property was to be taxed, there was no better basis on which to tax it than the rent for which it would let. Allusion was made in the Paper to the American custom of taxing property upon its capital value, a system which would be impossible and unjust in this country. Take as an example the case of a piece of common heath-land, which at present has no annual value, but which, as soon as population squeezes out in its direction, may be worth £10, £20, or even £30 an acre ground-rent. The property was to be taxed according to its value at the present time. The capital value not only included its present value as heath-land but its now dormant value as building-land.

In considering the question whether the tax should be wholly borne by the landlord or partly by the lessee or the occupier, it was admitted by the author of the Paper that all taxes ultimately fell upon the owner of the property. If a property was worth in rent and taxes £60 a year, and the taxes amounted to £20, the rent was only £40. If there were no taxes, the rent would be £60 a year. In other words, it was a mere matter of arrangement who paid the taxes. If a change were to be made to-morrow, so that some taxes now borne by the tenant had to be paid by the landlord, the landlord would simply go to his tenant and alter the existing arrangement. If there were only a sufficiency of property in a place to meet the demand for property, the tenant would acquiesce, and the whole thing would go on just as it now did, except that part of the taxes would

be levied on the owner (who might not, perhaps, be resident in the place), with all the inconvenience of a double collection, while nobody would be benefited by the alteration.

Then it was urged that ground-rents ought to be taxed, and a Bill to effect that alteration had been recently introduced into the House of Commons.

Now, first of all, what were ground-rents? Of course, they were rents of land; but ground-rents were as various in their relative amount as any class of property could possibly be. The creation of ground-rent was, in fact, a piece of machinery for covering building-land. An ordinary owner of building-land could not develop his estate unassisted by a builder, nor without the expenditure of a large capital. An arrangement must be made with a builder, who would stipulate for a large share of the profits of the transaction.

In working out his share of the profits the builder had to secure, in the first place, the landowner's ground-rent. It very often happened that he had succeeded in doing this when only half of the ground was covered. In that case, the other half was to him profit-rent. This profit-rent he would be free to create in any form he chose, or as might be convenient. To give an instance from his own experience. He had once, for his own occupation, built himself a house in Warwick Square. The original lessee was the late Mr. Thomas Cubitt, who had taken from the then Marquis of Westminster and two other landowners that great area of land on which he had laid out and formed the streets which now constitute Pimlico. The length of his frontage was 26 feet, and for this he paid at the rate of £1 per foot ground-rent, or £26 a year. He went into occupation of his house. He was rated upon the full value of it, including, of course, the ground-rent. Now, if the principle suggested had been in operation at the time, he supposed that Mr. Cubitt would have been rated for the £26 a year, and that

he (Mr. Ryde) would have been rated at £26 less than he was assessed at. But Mr. Cubitt having secured the whole of the Marquis's rent on other land was entitled to take up a lease of the house at one shilling a year ground-rent. He (Mr. Ryde) therefore purchased from Mr. Cubitt his improved ground-rent of £25 19*s.*, and the original ground-rent reserved to the Marquis of 1*s.* per annum was all the ground-rent which remained. Suppose Mr. Cubitt had been rated for the £26, he must have been relieved from that assessment when he (Mr. Ryde) wiped away the ground-rent by purchase, and he (Mr. Ryde) would, he presumed, have been rated as occupier for the full value of the house. If it were contended that it was only meant to rate in respect of ground-rents freeholders and not lessees, then in this case there would be nothing but the nominal sum of 1*s.* per year to rate. If the occupier of a house be rated to the extent of the full annual value, the ground-rent, which formed a part of the annual value, was rated with it. Take another instance. Suppose a number of houses to be built upon a given piece of land, and that each house is to carry £15 ground-rent until the freeholder's rent is satisfied. Suppose, at the close of the bargain, there remained only £7 10*s.* of the agreed rent to put upon the last house, just as, in the other case, there was nothing left beyond the mere 1*s.* per annum. How were those houses to be rated in respect of their ground-rents?

The matter was not arguable in any way. It really came to this: that if the owner was to be rated for his ground-rents there must be a double valuation of every house, resulting in this double trouble and expense of collection, and Adam Smith's axiom (quoted by Mr. Mathews), that as little as possible should be taken out of the pockets of the people to meet the requirements of taxation, would be completely violated. He thought it should go forth from

this Institution that the attempt to rate ground-rents would do nobody any good, nor would it commend itself to the judgment of any practical man. In fact, there was no room for it. Nothing could possibly escape taxation under the present system, and if the owner of a ground-rent escaped from parochial assessment he was caught by the income-tax, which in these times was pretty sharply looked after. In rating houses on their full annual value every interest was included in the simplest way, and no attempt should be made to create any new or fanciful rate or franchise. He should be sorry to omit, in discussing this Paper, a reference to the paragraph in which the author stated that, "It has "been shown that the rates on agricultural land are ulti- "mately incident on the owner; why should a landowner "with an income of £1,000 a year pay £100 a year for a "tax in respect of which a trader, a fundholder, or a mort- "gagee escapes scot-free?" Of course, there was no reason; but he disputed the fact that the fundholder did escape, escape, seeing that he was caught by his income-tax.

There was a question which was not touched upon in the Paper—whether a rate to cover the expenses, say, of carrying out the Elementary Education Act should be charged upon landed property only, or upon all kinds of property, real and personal, alike. In fact, whether it should not be paid out of the consolidated fund of the whole country instead of the parochial rates.

Then there was a notion that stock-in-trade ought to be rated. Profits in trade were rated through the machinery of the income-tax; but how was a man's stock-in-trade to be rated? Traders made most profit when they could buy in the cheapest and sell in the dearest market. Suppose a dealer in iron bought a large quantity when iron was cheap, and kept it until he wanted it; was he to be rated for that

large and abnormal stock? Or suppose a brewer bought sufficient barley or hops when they were cheap to last him for two years, was he to be rated for it? He could never be caught. Some means would be found of concealing the ownership. The reason for the exemption of stock-in-trade was, that all attempts that had been made to rate it had been found impracticable and had led to confusion, and he believed this would be the case again if any attempt were made to revive the system. The trader was already rated for fixtures. If he had a steam-engine he was rated in respect of it. A baker's oven was rated because the bakehouse was worth more with the oven than without it.

The author of the Paper stated that a man, having taken a lease based on the taxation as it existed at the time he took it, found that some new tax was imposed upon him, and was told that he must pay that tax until the expiration of his lease. This was scarcely a hardship. It was but one of the incidents of a lease. Suppose on the other hand that the business carried on in that particular place enormously increased. Suppose the value of the house was doubled by reason of the opening of a railway station. The lessee in that case would not go to his landlord, and say, "Something "has happened which makes this thing very much cheaper "to me, and I will give you an extra rent." If a man was to be held entitled to the profits contingent upon a lease he must submit to the losses; and if not content with an arrangement of the kind he must be satisfied with a yearly tenancy, in which case he would have all the benefits of reductions when things were adverse to his holding, but he would lose all the benefits when things were the other way. To come to the final recommendations of the Paper, the first was, "That the owners of property, upon whom so large "a proportion of the local taxes are ultimately incident,

"should have an equitable share in the election of those "who levy the taxes and administer their expenditure." Everyone would agree with that. The second was, "That "some of the taxes should be levied on the landlord, "others on the tenant." He had already gone into the question, and he suggested that while the incidence of taxation might be wrong—while such a tax as the education rate and the highway rate should be charged upon the consolidated fund instead of upon the land—this was no reason for asserting that any benefit could be derived by charging one tax on the owner and another on the occupier. The owner, after all, would have to bear the brunt of the whole, and things might just as well remain as they were.

The third recommendation was, that the income-tax should be assessed on the net and not on the gross rentals. He quite agreed with that proposition. The present assessment of income-tax was the most iniquitous thing, except the assessment of the land-tax, that was known in this country. It was most absurd to charge income-tax upon the gross rental. Suppose a building to be worth £100 a year as long as it could be kept standing, but the landlord was obliged to spend £80 out of the £100 upon its maintenance, that would only leave £20 net rent. Yet according to the present assessment he would be made to pay income-tax upon the whole £100 a year. But as Mr. Hubbard had taken up the matter for a great many years, and had failed to get it altered, he (Mr. Ryde) supposed they would fail also. Nevertheless, they must all agree with Mr. Mathews that it was a grievance which called loudly for a remedy.

In conclusion, he was sure he was expressing the unanimous feeling of the Meeting in moving a cordial vote of thanks to Mr. Mathews for the trouble he had taken in

putting together his very interesting Paper, which would do honour to the "Transactions" of the Institution.

Mr. P. D. Tuckett (Fellow) had great pleasure in seconding the vote of thanks to his friend Mr. Mathews. These two Papers were worthy of his reputation as an accomplished scholar, and, taken together, formed a specimen of clear handling of figures and of ingenious argument, well worth reading, if only as an intellectual exercise.

With regard to the conclusions established in the previous Paper and recapitulated in the first pages of the present one, Mr. Mathews' reasoning appeared to him to be correct all through, except that some qualification was needed of the absolute statement (especially with reference to taxes imposed after the erection of buildings) that in the case of dwelling-houses the tax on the building-rent is incident to the occupier, to the effect that this was intended to apply to counties and districts where there is an increasing population, so that all the houses are required for occupation. There were instances in a neighbouring country, only a few hundred miles distant, of cities still existing which had once been populous, but which were now inhabited by only a few people, and the greater part of the houses in which were empty; and, although no such permanent condition had ever yet been seen in this country, there had often been temporarily gluts of houses through overbuilding, so that some houses had remained empty for years, until the increase of population provided occupiers for them. Under such circumstances the causes which lead to any particular rent being paid were very complicated, and it would be very difficult to prove that during such a period the incidence of the rates in respect to the building-rent

would be upon the occupier. But where there was a constant demand for more houses, it would be so.

But Mr. Mathews, no doubt, wrote this Paper with an important practical object, viz.:—To show, on behalf of a suffering class the great injustice of actual and threatened oppressive taxation, and therefore, in the very short time left to him, he (Mr. Tuckett) would pass over all details, and only attempt to deal with some of the larger practical questions raised.

It seemed to him that one must begin with the fact that we are undergoing a complete change in the constitution under which we live. That change had not been an absolutely sudden one, because it began 17 or 18 years ago with household suffrage in boroughs; it had now gone a very long step further in household suffrage being applied to counties, and we had now arrived at a condition in which we were undoubtedly living under a thoroughly democratic form of government. However people might differ as to the advantages or disadvantages of that particular form of government, everyone who had studied the subject appeared to agree that the democratic form of government was a very expensive one. There was no time that evening to prove that assertion by historical and foreign examples, but, as one illustration, he might mention the case of one among our colonies, which has a particularly extended franchise, the government of which had raised numerous loans in England, and was said to have spent a large part of the proceeds in paying high wages to men, who in fact constituted a large part of the constituencies, in the shape of public works of more or less utility, but very imperfectly productive as regards interest; and had done this until they had raised the indebtedness per head of the white population to three times the proportion that we have yet reached in this country.

It appeared from this paper that during a period which was about coincident with household suffrage in boroughs, the annual amount raised by local rates in this country had increased 50 per cent., while the population had only increased 16 per cent. Now that a further democratic change had taken place, many thoughtful people were feeling anxious as to the further development of local expenditure. No governing class had been very ready to tax itself, and it had always been the fashion for courtiers to flatter kings, and he supposed King Demos was no exception. So one must not be surprised that politicians had just recently discovered that working-men are proportionately overtaxed, notwithstanding the fact that the increasing number of total abstainers amongst them, provided they do not smoke, contribute absolutely nothing to imperial taxation, except 6*d.* per pound on their tea; and consciously, at any rate, most of them pay no local rates, whatever the incidence of these might be. He had no desire to see the burden of taxation on the working classes increase, but it seemed a dangerous condition that those by whose supposed wishes the legislature would in future be chiefly guided, would probably find much present convenience and profit in an extravagant local expenditure, without at once feeling the increased taxation, or the disastrous consequences that would follow later. For no one could neglect sound fiscal laws with impunity, and there was a nemesis for extravagant nations, as well as for individual spendthrifts.

That being the case, Mr. Mathews was doing exceedingly well to put before them figures showing the rapidly-increasing taxation, and to do all in his power to deprecate extravagant expenditure, and the increased taxation of property already so seriously depreciated. But he ventured to think that Mr. Mathews had not done at all well in

mixing up with his subject certain smaller questions of jealousies between different classes of fellow-sufferers, as to which should be the first victim. This seemed to be a period when people have ceased to be guided much by precedents and ancient customs, which after all, to a great extent, record the experience of many generations; and are disposed to work out over again all sorts of fundamental questions at the cost of untold disturbance of the relations between man and man. Mr. Mathews seemed to be a good deal carried away by the current, and asked all sorts of questions as to why things should not be very different from what they have been, almost from time immemorial.

It used to be considered that the chief object of Government was to protect the person and property of every subject, and to give him or her as much personal liberty as was consistent with the liberty of others. If so, it might be thought that Adam Smith's first maxim might include some modest recognition of the protection of the person as well as of the revenue. But now the object of Government appeared to be considered by many persons to be, to see that everyone conducts his affairs as the majority thinks best. The gentleman who read the last Paper before the Institution mentioned, as if it were an established fact, that the chief object of Government was to reduce the death-rate—a most astonishing proposition, and one which, if worked out, might lead, not only to vast expense, but to practical regulations compared with which the Permissive Bill would be a trifle.

The author asked in his Paper, Why should the landowner pay local rates whilst the mortgagee escapes? and, Why should not stock-in-trade be rated? and so on. Such questions might produce unpleasant retorts from the representatives of the mortgagee class—such as, Why should not

landowners pay probate-duty, and why should there not again be a 4*s.* land-tax, and why should not great mansions like Blenheim Palace be assessed at something more like the interest on their cost? Those who were ready in the supposed interests of the democracy to promote every description of taxation on property, would at once admit the alleged injustice of all those things, and be only too happy to remedy them by a process of levelling up; they would increase the income-tax on the one hand and charge probate-duty on real property on the other. Personal property was threatened as well as real. One prominent member of Parliament had already proposed a graduated probate-duty on personalty, rising to 50 per cent. on exceptionally large sums. It was time for all those who have property of any description to join in trying to resist extravagant expenditure, and it seemed a mistake for a class who depend so much upon law and custom, instead of defending their own established rights, to seek to disturb the rights of others. He would venture to remind Mr. Mathews of one who had been a great authority here—a Past-President whose untimely death they all deplored—Mr. E. J. Smith. He had heard him discuss the subject of Local Taxation before the Institution, and the ground Mr. Smith took was that the care of the poor and of the highways were ancient charges upon the real property of this kingdom, and that it was indiscreet for landowners to dispute the present incidence of those rates, but that they were quite right in protesting (and it was wonderful that they had not protested more) against other and completely modern charges being put upon them. These appeared, so far as he knew, to be, chiefly, the cost of elementary education and of the police. Rates levied by local boards were not, strictly speaking, taxes, but a return for services rendered. If people, instead of scattering

their houses about the country, aggregate them together, certain works in common became necessary in order to give value to those houses, such as sewers, pavements, street lighting, and so on, and the property that required these works—viz., houses and other buildings, was clearly the property that ought to pay such rates. With regard to Mr. MATHEWS' observation about the quarter of such rates levied on land, it was difficult to say why it should be just a quarter or any other fraction, but the areas were generally small, and it meant the putting of a small tax upon the accommodation land round a town; and it was possible it might be argued that the building or improvement of the town caused the accommodation value.

What had Mr. MATHEWS to gain by his reference to the Statute of ELIZABETH? Surely we could not go back to the time of ELIZABETH; many things had since then become quite settled, and matters of prescription. With regard to the taxation of stock-in-trade, he would like to point out how impracticable that was. He recently went over a bonded warehouse, full of tea from top to bottom. Supposing that tea were made subject to rates; it would tend to relieve the rating of certain other warehouses and buildings, but who would keep a warehouse full of tea in the ports of London or Liverpool, paying rates for it, when it could be kept at Antwerp or some other place free of duty? Such a tax would be subversive of some of ADAM SMITH'S maxims. It would drive away commerce, and do an amount of mischief that was almost incalculable. The fact was that the attempt to rate stock-in-trade, if made at all in the reign of Queen ELIZABETH, was found so impracticable that it was promptly given up. Nothing could be more subversive of the commerce of this country than to attempt anything of the kind.

It seemed rather inconsistent of Mr. Mathews to draw such a marked distinction between the natural rent and the improvement-rent of land, and suggest or imply that rating the latter was a hardship; and then to suggest that not only buildings but moveable stock in buildings should be assessed. He did not absolutely say that the improvement-rent should not be assessed; that would leave almost nothing to assess, because the natural rent of unimproved land was a mere nothing; but among improvements to land, town houses and commercial and manufacturing buildings and railways cost much more than agricultural improvements, and the principle of assessing improvements was carried to the very furthest point in the rating of machinery in factories.

He was really surprised that Mr. Mathews should have disfigured so excellent a Paper with such a question as, "Why should mortgagees escape rates?" Apart from stock-in-trade and moveable chattels, all personal property consists in certain charges upon some real property, for the public funds may be regarded as a mortgage on the property of the nation. The hereditament was fully assessed in every case, railways and other public undertakings notoriously so. Such a charge upon it as a mortgage was a charge raised at a low rate of net interest, in consideration of the owner covenanting to pay all charges on the property. It would be a frightful blow to all credit and confidence, if such a breach of contract were enacted by the Legislature, as to shift these charges from one of the parties to the other. Mortgages were either permanent or temporary; if temporary, the money would in such a case be called in. If permanent, as in the case of the debenture stock of a railway company, it would be a gross injustice to allow the ordinary shareholders to raise money at a low rate of interest, on the ground that it was a net charge, and afterwards to relieve

themselves of part of the rates on the railway at the expense of their debenture and preference shareholders.

Then, Mr. Mathews asked, why should not fundholders pay rates? It was a very dangerous principle for a State to borrow money and then reduce the income by charges upon it. It was true that our Government agreed to pay £3 per cent. interest, and now only pays £2 18*s.*, deducting 2*s.* as income-tax. That was done on the ground that the tax applied impartially to every source of income in the country, but even then it was a doubtful point. But to tax the national creditor in order to relieve another class from an ancient burden, would be an act of national dishonesty which might affect the national credit.

He thought it was a mistake for the advocates of the landed interest to raise these new questions as between real and personal property. Their real effective line, if they wished to do any good, was—

1st. To devote all their energies to advocating greater economy, and to try to stem the tide of extravagant expenditure:

2nd. To protest against the school board and the police rates being put exclusively upon real property:

3rd. To argue, as they might well do, that the absence of probate-duty on landed property was a very moderate set-off against their old prescriptive liability to pay for the poor and for the highways. That it was a very old arrangement that real property pays for the poor and the highways, and is exempt from the probate-duty, which personal property pays; and no doubt the probate-duty comes to less than the rates.

4th. To protest very strongly against what Mr. Mathews

> very properly called the iniquitous system of charging property-tax on the gross income. That it was one of the many curious anomalies of the day that it should be considered a very virtuous thing to provide dwellings for the working classes, and yet if any unfortunate person attempted to do so he is promptly pounced upon with excessive and disproportionate taxation. That people who had not gone into the matter did not know how unjustly the net income of small house-property was taxed. As regards property-tax, that it was not too much to say that it was very commonly double what it should be if charged on the real net income; that the rates, too, were often excessive, because no commonly-recognised allowance meets all the expenses. Similarly, though in a less degree, that landowners undoubtedly pay property-tax considerably in excess of that paid by most other classes, and this appeared far from just. And that if there were to be changes in our system of taxation, this surely ought to be one of them.

He had not time to comment on what he believed to be the fallacy underlying Mr. Mathews' comparison of the rating of railways and banks.

The passage about property held in mortmain was an anachronism after the Act passed last year, under which the club to which he belonged had just been called upon to pay a special annual tax of 5 per cent. on the annual value of the club-house in lieu of probate and legacy duty.

The Paper concluded with four suggestions for reforms.

The first was a very excellent one—that owners should have some larger proportion in voting power, or representation as regards local taxation. He would just mention that in the election of local boards there was a special system of voting, by which owners and occupiers can both vote, and each get one vote for each £50 of rateable value up to a maximum of six votes each, or twelve for an occupying freeholder. But it would seem that one of the effects of popularly-elected county boards must be to make increased expenditure more easy, and less subject to control on behalf of those who have to find the bulk of the money.

As to the second suggestion, he did not see at all why Mr. Mathews had put it in. The Paper did not lead up to it, and, whatever some other people might wish to propose, he did not see that it agreed with Mr. Mathews' general purpose to suggest that landlords should be directly rated. He failed to see any propriety in it. Some tenants appeared to think it was such a luxury to be a landlord, and to let a house at considerably less than the interest on its cost (as was now often the case), that the landlord ought to be ready at any time to spend his money on any little improvement the tenant might wish, and generally do and pay everything. But a landlord was, in fact, a person who (for a consideration) gave up the enjoyment of his property to somebody else who, enjoyed the whole benefit of it. And surely it was the person who was in the enjoyment and possession of the property whom the law should look to for the charges upon it, and not the person who had for the time relinquished it. Test the point by an extreme case. Some people seemed to think things were going to the bad. Mr. Ryde seemed to think so. Imagine that rates rose so high, and rents fell so low, that a house became worth very little rent at all. Suppose that out of £100, the rates were £95, and the rent only £5. Then

if the occupier were the person liable to pay the rates, it might be worth the landlord's while to let the house at the £5. But if the landlord were liable to pay the £95, on the chance of getting £100 back from the tenant, he would prefer shutting up the house, which would then cease to be useful to anyone, and the £95 would be lost to the community. It could hardly be a sound principle that could lead to such a result.

The third suggestion he entirely agreed with.

Of the fourth proposition he had already expressed his disapproval. Something had been said about local taxation of personal property in America. The revenue of the United States Government was raised by indirect duties, and this probably referred to the taxes of some individual states and cities. He believed the state taxes were very small, and in the West were chiefly for education. In one case he had met with a tax of three mills per dollar on incomes. The local burdens of New York City were said to be very great, but surely they were raised by rates on real property. At any rate, he did not believe the Americans had invented any satisfactory way of locally assessing personal property that would do in this country, apart from the breaches of contract it would involve.

He cordially agreed with Mr. Mathews in his last paragraph. The credit of England had long been our boast, and was the foundation of our national prosperity; but already the bonds of the Government of our great commercial rival, the United States, were worth a higher price in the market than our own Consols; and if we spent our energies in inventing new taxes or subjects of taxation, and in destroying confidence by creating uncertainty, and threatening the security of one sort of investment after another, instead of husbanding our resources, we may, in an old

and thickly-populated country like this, so discourage enterprise as to cripple industry and trade, and, after a time, become quite unable to support the growing population.

The vote of thanks having been put and carried unanimously, the Meeting adjourned.

No. 234.

AT

THE ORDINARY GENERAL MEETING

Held on Monday, April 12th, 1886.

THE PRESIDENT (MR. E. I'ANSON) IN THE CHAIR.

The adjourned discussion on the Paper by Mr. WILLIAM MATHEWS (Fellow), entitled "The Taxation of Real Property," was resumed by

Mr. W. EVE (Fellow), who said he was exceedingly sorry that, owing to the absence of Mr. SQUAREY, the task had fallen to him of re-opening the Discussion.

There were a few passages in Mr. MATHEWS' very clever Paper from which he would venture to differ. At page 293 he stated that "in the case of houses, the tax on the building-rent will be borne by the occupier." His own experience tended to show that it was generally borne by the building-owner or lessee. He had in his mind an estate situated in two parishes; in the one the rates were 2*s.* in the £ less than in the other, and this certainly had the effect of preventing the builder from getting as much on mortgage in the latter case as he would get in the former.

He agreed with Mr. MATHEWS (page 303) that in hundreds of parishes in which improvements had been made, the present rents merely covered the interest on those improvements. This, indeed, was a very important point to bear in mind, having regard to the agitation that was going on as to rating generally.

He did not, however, quite understand the remark that followed (page 304), that "the result is that capital employed in the improvement of land is subject to an onerous

impost, from which capital employed in other industries is comparatively free"; for it appeared to him that anybody spending money on building houses was handicapped in precisely the same way as in the improvement of land, and would be rated in exactly the same way as on any other improvement effected on land.

Then again, on page 307, Mr. Mathews expressed disapproval of the Union Chargeability Act. His only idea was that it was an extremely useful Act. The previous state of things was very prejudicial to the poor, many persons being deterred from building houses or from allowing them to be built, in order that the parishes should have less poor rates to pay. As a consequence, the poor, who should have been housed on the estate where they worked, had often to go many miles to their homes, and when they got there those who housed them had to pay rates more properly chargeable to the parishes where the work was carried on.

At pages 310 and 311 Mr. Mathews alluded to railways, mines, gasworks, &c., as being the only undertakings assessed on the basis of their profits. In this he differed from him entirely. A farm was rated on exactly the same principle as a waterworks or gasworks. The rateable value of a farm depended on what the tenant would give for the land, having regard to the remuneration he would require for his time, exertion, and interest on money, and the same held good with regard to the railway, waterworks, or whatever it might be. No doubt when rating land, the valuer, guided by experience of similar land elsewhere, could estimate the rent off-hand at so much per acre, but this was not the true way of ascertaining its rental value. The true way, as would be seen on referring to "Bayldon on Rents and Tillages," was to estimate the productive qualities of the land, as one would estimate the productive qualities of a gasworks or a railway, by ascertaining the outgoings necessary to earn the

produce and the remuneration which the tenant was to obtain in return for his exertions, together with adequate interest on the capital employed. Therefore, although, in practice, the process of rating 100 acres of land involved a good deal less routine than the process of rating a railway, the principle was exactly the same, viz., the ascertaining what a tenant would give for the land, having regard to the produce it would realise, and the expense to which he would be put in realising that produce.

He agreed with Mr. MATHEWS in strongly condemning the charging of income-tax upon the gross instead of on the rateable value. He had hoped that something would have been done in the matter by the Government, having regard to the decision in DOBBS' case, but the language of the Income-Tax Acts was, he feared, too plain to admit, as in that case, of a new construction, and there was, probably, no chance of redress except by direct legislation. The injustice of the present system was, there could be no doubt, extremely prejudicial to trade. In the case of a house a deduction of one-sixth was usually made in respect of the difference between the gross and the rateable value, and in the case of a manufactory one-third. It was not only unwise from a political point of view, but was also very unfair, that such a difference in the amount of the deduction should be suffered to exist. For example, two persons invest in two properties each producing £100 per annum, the one being a house, the other a manufactory. Both pay property-tax on £100, but one puts £83 into his pocket, the remaining £17 being spent in repairs, &c., while the other puts £66 only, he having to spend, probably, twice as much, or £34 for repairs, &c. It was an obvious fallacy to call such a tax an income-tax.

He observed that Mr. TUCKETT said on the last occasion (page 331) that "the rates, too, were often excessive, because

no commonly-recognised allowance meets all the expenses," but this he (Mr. Eve) thought was, mainly, because the Act was not properly applied. He thought that cottage-property was very fairly assessed as a rule, and if it were not there was a remedy provided.

He was sorry to see that Mr. Tuckett (page 332) somewhat condemned Mr. Mathews' suggestion that the rates should be divided between the landlord and the tenant. Without saying that the plan was desirable—he had not made up his mind on that point, for there were great difficulties in the way,—he certainly did not agree with Mr. Tuckett's observations that the proposal "did not agree with Mr. Mathews' general purpose." He (Mr. Eve) hoped that particular purposes and interests, if the discussions of the Institution were to serve as guides to outsiders, would be less considered in that Hall than the principles most likely to be beneficial to the general community.

The proposal to rate ground-rents involved in his opinion many serious difficulties. First, what is ground-rent? It was no explanation to simply transpose the words and call it the rent of ground. He was himself at a loss for a satisfactory definition. He had in his mind a property in the City let at £600 a year rack-rental, about 20 years since. That property had improved so much in value that the ground alone was now worth £600 per annum without any buildings on it. In this case, what rent would be rated? The £600 would have been the rack-rental, 20 years ago. It would now be the ground-rent. How could such a property as that be assessed in respect of ground-rent? Then again, was a ground-rent when bought up to cease to be rated? Take another case of improved ground-rents. He had, again, in his mind an estate where the original ground-rent was £1 10*s.* a house, but several groups of houses were let together—it was not usually the case nowadays—and relet

at £8 a plot. How was a case like this to be met? Was the occupier of the house to be rated on, say £50, less the £8 which he paid his lessor, and that lessor on his £8, less the £1 10*s.* which he paid to the freeholder, and, lastly, the freeholder himself on such £1 10*s.*? What was to be done when either of these persons acquired the interests of the others, or where the person held, as was often the case, several houses under one lease the ground-rent on them not being apportioned? The result could only be endless complications, even assuming the proposal to be practicable at all.

Another difficulty presented itself in connection with the fundamental principle of the power to vote for those who spent the money. The vestrymen of the Metropolis were elected by the ratepayers. But the owners of ground-rents in the Metropolis lived, many of them, in distant counties, and how were they to record their votes and get their views represented at the poll?

There was another consideration, also, in connection with the proposal to rate ground-rents. One great reason why ground-rents were so valuable was that not only was the security which they afforded complete, but the amount one was going to receive was fixed and certain, and persons who wanted a certain and not variable amount of income were willing to take a lower percentage, to secure that object. But directly the amount became uncertain the security would become depreciated. He held, therefore, that any change of the kind proposed would be undesirable from every point of view.

Mr. T. H. Elliott (Visitor) said he thought all who had heard Mr. Mathews' Paper could not but feel exceedingly interested in the very valuable matter he had put before them. To his mind, as one of the members of the younger

generation whom he saw present, the portion of the Paper which was of especial interest to him was that in which were set forth the leading principles upon which, in Mr. MATHEWS' opinion, future reforms should be based. Those leading principles were clearly and distinctly enunciated (page 315), and, with the permission of THE PRESIDENT, he should like to be allowed to offer a few words respecting them.

The first principle was practically that there ought to be no taxation, either direct or indirect, without representation. He imagined that in these days few would be found to object, in theory, to the adoption of that principle, and that the position assumed by Mr. MATHEWS was unassailable when he said that owners of property were entitled to make their voices heard on all questions which affected that property, and which entailed expenditure in the district in which that property was situated.

A more difficult part of the question was approached by Mr. MATHEWS in his second principle of future reform, in which he indicated that, in his opinion, some taxes should be levied on the landlord and others on the tenant. He would rather put the same idea in a somewhat different form. He (Mr. ELLIOTT) would have said that a portion of the local expenditure, or, at any rate, a part of some of the leading items of which it was composed, should be contributed by the owners of property according to their respective interests. There seemed to him to be a danger of forgetting that property was not always the sole property of its ostensible owner, but that there was frequently a kind of divided ownership, by means of which several persons enjoyed the product of the property. In his opinion the most easy method of effecting any adjustment of taxation amongst the various persons interested therein was by the adoption of one of the principles underlying the income-tax.

He would, in the first place, assess all local rates upon the occupier of the property, but he would have the principle of deduction which, in the case of the income-tax, distributed in the most perfect manner the burden of that tax amongst the various persons interested in the property. As they knew, the occupier of property, who owned no portion of it, was entitled to deduct the tax from the amount he paid to the immediate landlord, but that immediate landlord was, in turn, entitled to deduct a proper proportion from the person, for example, who held a mortgage on the property, or who received a ground-rent therefrom. By this means the incidence of this branch of Imperial taxation was exactly adjusted. All contributed to the income-tax imposed on property, in proper proportions, and it seemed to him that, subject to existing contracts, such a principle should be applied in the case of the poor-rate, the education-rate, and, possibly, some other rates raised to meet branches of expenditure of more than local importance. Those rates would then be borne clearly and unmistakeably by all those who possessed an interest in the property. He said, subject to existing contracts, for those contracts could not and must not be ignored in a change of this kind.

In fact, this formed one of the great difficulties in the way of an equitable charge. Mr. Goschen, in his Report of 1871, made some ingenious efforts to deal with the difficulty, and he believed that in the direction of those efforts the most likely solution of the difficulty lay. He would, however, submit that the general principle could not be gainsaid, viz., that the maintenance of the poor, the education of their children, and one or two items of expenditure of the same kind ought not to even appear to be borne by any particular kind of property, or by any particular person having an interest in that property, but should be equitably shared amongst owners of all kinds of property, according to

their respective interests. The adoption of this principle would have the further advantage, more than ever necessary at a time when all shared in the government of the country, viz., that the second of ADAM SMITH's cardinal features of taxation would be observed. Mr. MATHEWS had done well to quote those cardinal features in his Paper, for they never could be too frequently put forward. ADAM SMITH laid down the maxim that, "The tax which each individual is bound to pay ought to be certain, and not arbitrary. The time of payment, the manner of payment, the quantity to be paid, ought to be clear and plain to the contributor, and to every other person." For some time past there had been a warm discussion between owners and occupiers of property as to who really paid the rates. The occupier knew he paid them directly, and not unnaturally thought that he ultimately bore their burden. The owner, on the other hand, thought the real incidence fell upon him.

In that room it had been maintained that the latter was the correct view. There was, however, a constant discussion between these two classes as to whether they paid the rates or not; and it was clear, under the present system, that no one could tell conclusively what he paid, when he paid it, or how he paid it, and that, therefore, the second cardinal principle of ADAM SMITH was infringed. Some such system of deduction as he had suggested would make clear who paid the rates, and he would submit that it was only right that those who paid them ought to have the credit of doing so in the eyes of the community. His own opinion was that at the present moment a considerable portion of the rates fell on the owner, but it was difficult to persuade an ordinary occupier that in reality he did not pay what he so obviously seemed to pay. By a system of deduction a serious part of the difficulty of adjusting the local taxation system in this country could be solved.

Another matter upon which he was interested was the question of the income-tax. He thought that in some part of the Paper, or in some part of the discussion, the word "abominable" had been used as to the assessment of income-tax on the gross value of real property. To any of those speakers who had pointed out this or any other inequality in the income-tax, he would say, read Mr. GLADSTONE's speech of 1853. When that statesman renewed the income-tax in 1853, after its period of trial had terminated, he pointed out the many inequalities of which it was composed. Mr. GLADSTONE alluded to the taxation of the owner of a terminable annuity on the full value of that annuity. He pointed out the injustice of taxing the income of a professional man to its full amount, although as a matter of fact in earning that income the man was wearing himself out, and sooner or later would be unable to continue his labour. So Mr. GLADSTONE proceeded, schedule by schedule. And what was the conclusion at which he arrived? Why, that all those inequalities and anomalies adjusted themselves; that each had something to complain of, and that, on the whole, there was approximately an equalisation of burdens; so that the owner of land assessed on its gross value might comfort himself by the reflection that his professional friends, his fundholding friends, as well as he himself, were taxed at a lower rate on a higher estimate of income rather than at a higher rate on a lower estimate.

But apart from that, it was impossible to deal justly and fairly with taxation by singling out for redress a single inequality of a single branch of taxation. No one believed more than he that at the present moment real property was unduly burdened as compared with personal property, that real property bore more than its fair share of taxation, and that personal property should contribute more than at present to the imperial and local expenditure of the country. But

this view was weakened rather than supported by pointing out single inequalities. Take, for example, the death-duties under which real property was lightly burdened as compared with personal, whilst the reverse was the case with the income-tax, but the relative degree of these inequalities could be gauged by looking at taxation as a whole. It was only then that one could form a just conclusion as to whether one class of property more than another contributed unduly to the taxation of the country. He believed that in the result it would be found that real property did bear more than its fair share of taxation; but the income-tax anomaly by itself would be entirely outweighed as compared with the death-duty anomaly.

He should like to allude briefly to the question of the rating of personal property. In the case of personal property, he felt that its owner did not, at the present moment, contribute as much as he ought to do to many of the items of expenditure which, in his own opinion, were of national rather than of local concern. As he had already stated, he could conceive no reason why the maintenance of the poor, for instance, should fall exclusively on a particular kind of property; he thought that all should contribute to the maintenance of the poor, who, unfortunately, were always with us to be maintained, according to their respective abilities, and in that direction considerable adjustment, he thought, was necessary.

There was no great difficulty in the matter. Through the income-tax machinery we had the means of rating by far the greater part of personal property, with, perhaps, the solitary exception of stock-in-trade. For his part he would altogether exempt stock-in-trade from rating. It seemed to him, as the Americans had found, that it was practically impossible to rate stock-in-trade; but even if it were possible, he was by no means confident of the justice or

propriety of doing so. Stock-in-trade was obviously essential to the commerce of the world. It was, as it were, personal property not realised, but in the course of realisation, and no man would keep it longer than he could help, or for his own personal pleasure. Therefore he would say, rate everything in the nature of realised property, but not stock-in-trade. Large classes of personal property ought to be rated—all government stocks, and especially all foreign and colonial securities. He saw no reason why a person holding large investments in foreign securities, who sent his capital out of the country, and acquired, possibly, railways in America, tea-plantations in India, and so forth, should not contribute accordingly. A man who left his capital in the country was rated and taxed more than one who sent his capital out of the country, and that was a condition of things which was not, in his opinion, desirable. He believed that by the income-tax machinery we could meet many of the difficulties which had presented themselves with regard to this subject. It was always to him a matter of satisfaction when the education of the country on the question of local taxation was to any extent advanced, and the more the subject was examined and discussed the more it would be seen that there was need for reform, and the more that reform would be expedited.

Major P. G. Craigie (Visitor) thanked The President for calling upon him to say a few words on a subject in which he felt great interest.

The Paper that Mr. Mathews had read had elicited a very interesting debate, though a short one. A few weeks ago, and, also, if he remembered rightly, a year ago, they had, in that Hall, a debate on the same subject, on a former Paper by the same author. He thought there was evidence on this occasion of the way in which public attention to the

matter had grown in the interval. On the present occasion he observed they had advanced a good deal over the earlier debate, and many of the Members regarded as a practicable and possible thing the rating or taxing of personal property for local purposes. Perhaps this was due to the important discussion which, since the last meeting, had taken place within the walls of Parliament, where there had been seen members of the present House of Commons, who were attached to principles as far as possible removed from those of the usual remonstrants against the existing incidence of local taxation, deliberately and formally adopting the idea that the great mass of the wealth of the country now unrated should no longer escape contribution to local rates. How that contribution was to be levied was a problem which had exercised the minds of those who had approached the subject. His friend who had just addressed the meeting pointed out that it might, perhaps, be done through the medium of the income-tax assessment, and he had put in a word for the general fairness of the income-tax against the attacks that had been made upon it in that room. It was quite true that one could not, in dealing with questions of taxation, deal with any one tax by itself. Every tax was a matter, if he might so say, of account. There were so many items on the one side and so many on the other; some taxes would err in one direction and others in the opposite. The way in which the income-tax fell on real property—lands and houses—was, undoubtedly, a grievance to the owners of lands and houses. But so also the death-duties, falling on personalty much more heavily than on realty, was a grievance in another direction. All those things had to be taken collectively into account in arriving at the true balance. If that account were fairly investigated in a statistical and impartial manner there was not the least doubt that the con-

clusions of Mr. Mathews would be borne out, and real property shown to be overtaxed.

The income-tax or the death-duties were, after all, but individual straps by which the knapsack was bound to the back of the taxpayer. The proper question was, Was the burden as a whole adjusted fairly, or did it press with undue severity on any particular class? Mr. Mathews referred to the poor-rate as one of the heaviest burdens of real property; but he did not, he thought, lay sufficient stress on a point which should not be altogether foreign to their consideration. The very unequal incidence of the poor-rate in different parts of the country was, to no small extent, due to the varying administration of the poor-law. While we were considering taxation, and no one was more in favour of revision than he, it should not be left out of account that this particular tax might in some parts be one of 10 per cent., and in some parts 6 per cent., and yet again, in other parts, under circumstances precisely equal, a tax of no more than 3 per cent. on the property concerned. Relief was thus, to some extent, in the hands of the guardians of the poor, and the way in which the poor-law was administered was, to some extent, accountable for the pressure of taxation. It would ill become those going to Parliament to ask for a remission of taxation to forget that we had some power of reducing taxation in our own hands, at all events, *qua* that particular tax. It was not so with the police-rate or county-rate, or some parts of the borough-rate.

Statements made on different occasions, in that Hall and elsewhere, as to the possibility of rating personal property locally, in the place in which it existed, to the poor-rate, had exercised many minds. It was urged by one speaker in the former debate (he thought it was Mr. Tuckett) that there was no good in alluding on the present question to the

principles of assessment prescribed in the old Act of Queen Elizabeth; that many things had long since become quite settled as matters of prescription, so that no practical grievance now arose; but he ventured humbly to differ from Mr. Tuckett on that point. He thought they did well to go back to the origin and intention of those rates if they were to have justice done in the matter.

No doubt could be felt by a student of rating history that not only in the time of Elizabeth, when the Act of 1601 was passed, but onwards to a much later period, there was a real taxing of personalty; and the Court of Queen's Bench disallowed rates where the intention of the Legislature in this respect was not actually carried out. As an illustration of the older practice, he had in his hand an extract from an old rate-book, in confirmation of what he said. This was an extract from the rate-book of the parish of Maidstone, in the year 1668. There was in one column a whole schedule of names such as stood in a rate-book now; then another column giving the number of acres; then a third column showing what was charged in respect of the land; and, lastly, a further column headed "abilities," on which the rate was also laid. For instance, he would quote the following entry:—"Bullock Lane, W. J. Caleb Banks, 26 acres." In respect of his land he paid 9*s.* 9*d.*, and in respect of his "ability" he paid 15*s.* Thos. Pott, 13 acres. In respect of his land he paid 3*s.* 10½*d.*, and the "ability" on which he was charged was only 3*s.* 9*d.* Thos. Wattle, 3 acres, paid 1*s.* 1½*d.*, but his "ability" was estimated only at 9*d.* Sir John Tufton, Bart. (on two different properties), paid on 56 acres 7*s.* 6*d.*, and on 114 acres he paid 16*s.* 3*d.*, and beyond this £2 12*s.* 6*d.* in respect of his "ability." The question of taxing personalty was thus reduced really, if rudely, to practice elsewhere than where the Report of the Commission of 1843 seemed to have alluded to. It was there asserted, he

believed, that it was only in the south-west of England, where woollen manufactures prevailed, that the rating of stock-in-trade obtained to any clear extent. The case he referred to was, as he said, Maidstone, but he could refer to London itself, to Lincolnshire, and to Durham, where personalty rating was required by the law courts. In seaports, shipping was held to be rateable, and was rated in the same way and down to a much later time than when Lord Mansfield tried to get rid of the statutory obligation of rating of personalty. There was a continuous string of evidence to show that there had been endeavours to bring all kinds of property into rating down to 1840, when the temporary Exemption Act was passed, which has been continued to the present time. If the taxing of personalty were restored, it must be on different lines from these old ones. It was, no doubt, a matter of great difficulty. But if we looked across the Atlantic the method practised in the States of America would be seen, and that they had had to face the same problem there as here. With more or less success and in varied forms both there and in Europe personalty was made to pay.

He had in his hand a statement of the practice at the present time, or a very few years ago, in Iowa. The following personal property was subject to taxation for local purposes, and the recital was surely comprehensive enough. They began by taxing "horses, cattle, mules, asses, sheep, swine, and money, whether in possession or on deposit, and including bank-bills, money-property, or on judgment mortgages and other like securities, and accounts bearing interest, property situated in the State belonging to any bank or company, incorporated or otherwise, whether incorporated by this or any other State, public stocks or loans, household furniture, including gold and silver plate, musical instruments, watches, and jewellery, private libraries, when their value

exceeded 300 dollars, and every description of vehicle, farming utensils, machines and machinery, and professional libraries for their aggregate value all over 300 dollars"—that was the minimum on which this tax was charged—"boats and vessels of every description, wherever registered or licensed, and whether navigating the waters of the State or not, if owned either wholly or in part by the inhabitants of this State or not, to the amount owned within this State." It was the business of every inhabitant of the State, of full age and sound mind, to assist the assessor in listing all property subject to taxation, of which he is the owner, or has the control or management. A banker was liable to taxation only for such moneys and credits as are in his possession as owner, and not for those which he may hold as the custodian of others. Bank-deposits were taxable to the depositors and not to the banks. In making up the account of money or credits which any person was required to list, or have listed and assessed, he was entitled to deduct from the gross amount all debts in good faith owing by him. The term "credit" was defined to mean every claim for money, labour, or other valuable thing, and every annuity or sum of money receivable at stated periods, and all money or property of any kind secured by deed, mortgage or otherwise. In assessing 'stock-in-trade' and personal property generally, it is understood, and the law provides, that the same shall be assessed at its cash value; but, as a matter of fact, such property is rarely assessed for even one-third of its value. There was great variety in the purposes to which local rates were devoted in the United States. Personal property bore a considerable share, because it contributed to all these purposes, viz., a State-tax, general county-tax, school, bridge, county-board, insurance, poor, teachers, school-house, contingent, and road-taxes as well as the road-poll, and county-poll.

Another argument that had been alluded to was the fact that some of our older taxes, the highway and poor rate particularly, were very old burdens always charged on real property, and that it would be an injustice to divert those burdens; but, on going back to the oldest Acts, it would be found laid down specifically that in the origin personal property was certainly to contribute as well as real property to the repairing even of the roads. In one of the Acts of Philip and Mary, and other of the older Acts, taxes were specifically laid on personal property, and a statute labour-tax was laid on individuals in parishes, who were bound to give so much of their labour whatever condition of life they might be in. Therefore, it was clear a charge on real property alone was not the original principle of these so-called hereditary burdens.

The Union Chargeability Act had been alluded to by Mr. Eve, and he was glad to hear the speaker, who did so, support that Act, and for this reason, that the changes made by the passing of that Act seemed to afford the strongest argument that taxes might be greatly shifted, however long a time had elapsed from their imposition. Parliament retained the power to shift the poor-rate, as it did in the case of other taxes, from one class of property to another, and from one back to another. But, again, if an hereditary burden was not to be varied, how were they to fix its amount? The name of a tax often remained when its objects were changed or added to. The poor-rate had thus swollen out of recognition. The great mass of the burden had arisen within the memory of those present. From 1780 it had increased from 2 millions to 14 millions at the present time. Where did the hereditary liability begin or end?

On the previous occasion Mr. Tuckett said it was very unwise to challenge retort, such as—Why should not palatial

mansions be assessed at something more like the interest on their cost? In regard to that, he would refer to a speech of the late President of the Local Government Board, Mr. Chamberlain, who, he thought, answered Professor Rogers fully on the occasion of the debate on the question in the House of Commons, on the 23rd of March.

But he hinted also that it was better not to moot the land-tax question. If anyone said the old land-tax of 4*s.* was a thing to be afraid of, he (Major Craigie) would answer it was not, provided that 4*s.* land-tax were levied as the original Acts of Parliament declared it should be levied, which was in the form of a code of income-taxes, and included all personal as well as real property. Land-tax was spoken of as if it were confined to land, and as having been an original tax on land; but, as Macaulay described it in his history, it was the legitimate successor of the old subsidy extracted from all property, and intended to be extracted from everyone, and they could soon find, by referring to the old Acts, how the tax was levied. Its present name was a misnomer. The inconvenience and difficulty of taxing personalty to land-tax or to rates he was willing to admit, but that did not alter the justice of the case. They were told to be careful how they provoked a readjustment of the death-duties. He wished to raise that question. It might be presumption on his part to do so, but he fearlessly said, Let us understand, once for all, what we have to pay. By paying the full quota of death-duties, should we at the same time get rid of the present quota, we unjustly bore, of local taxation? Which was the greater of the two? It was a matter reducible to figures, and was a question of arithmetic.

A considerable portion of succession-duty now fell on personal property, and a considerable portion of probate fell on rated property, perhaps not *real* in the same sense as

lawyers used the term, but still taxed for local purposes, and considerable adjustment must be made on both sides of the account; but he should be surprised if he did not find, as he hoped the returns about to be presented to Parliament would demonstrate, that a large proportion, probably one and a half millions of legacy and probate duty, was already borne by property that bore rates, and taking into account railway property it would be about two millions. If the entire account were adjusted it would be made plain that real property bore more than its proper share of contribution even to the Imperial exchequer, and the local rates besides.

The great deterrent was not in fighting this question, which must be raised and fought out statistically, but in the constructive effort to meet the difficulty that there was in taxing personalty; and that was a question to which he hoped the Institution, with its great capacity for ascertaining facts, would devote some attention. There was nothing to fear in raising the question, and in asking for simple justice, and no more, in the taxing of realty.

Mr. R. F. Sturge (Fellow) said that, as reference had been made to the suggested rating of ground-rents, he would like to say a few words upon the subject. There seemed to be an impression out-of-doors that ground-rents were not rated at all to local taxation, escaping altogether. It was hardly necessary to point out to anyone in that Hall that this was a mistaken idea entirely. It was one of the numerous popular fallacies. It would be just as correct to say that railways were not fully taxed because the dividends on the preferential stocks were not affected by the rates. When a piece of land was let for building, and houses were erected on it, the ground-rent became merged in the value of the houses, and the whole value was

rated to the poor; therefore the ground-rent did not escape, but paid its proportion of local rates as the buildings did. He apprehended that the real grievance (if there were one) was this—not that a ground-rent was not rated, but that the tax on it fell on the wrong person, in other words, that the ground-landlord did not pay directly; and builders had remarked to him, that they thought it very hard that the ground-landlord escaped all his share of rates. But suppose that ground-rents were made directly rateable, what would be the result? In the first place, there were all the existing ground-rents to be considered, and the effect of rating them would be to render them suddenly liable to very large deductions; and those who had entered into these contracts, under which they received a certain fixed income, as from the preferential stock of a railway, would all at once find themselves liable to an impost for which they had not made allowance.

He could not think that such taxation as that would be sanctioned by the Legislature. Then, as to future ground-rents. The ground-landlord would say, "If I am to pay rates on my ground-rents, I must increase the price of my land," and the builder would be able to afford, *pro tanto*, a higher ground-rent than at present, as he would have less to pay in the shape of rates. But there would be nothing to hinder the ground-landlord from making a stipulation that he should receive less ground-rent without deduction for rates; and this could only be prevented by an enactment that ground-rents, being rated separately, the occupier of a house should be entitled to deduct the rates thereon from his rent in the same way as he now deducted the property-tax. This would be another infringement of the principle of freedom of contract, and he did not see that any useful

result would ensue. Many difficulties would arise in practice, and the result to the local exchequer would be the same as at present.

Mr. Mathews, in reply, said, it was a matter of great pleasure to him that the question upon which he had prepared the Paper read at the last Meeting of the Institution had given rise to such an interesting discussion and so many differences of opinion on the part of the Members.

With respect to the criticisms made on the Paper, perhaps it would be convenient to take them, as far as he could, in the order of the speakers, and he had first to refer to the remarks of his friend Mr. Ryde, who, he was sorry to see, was not present. Mr. Ryde commenced his remarks by the observation, that he thought Adam Smith was a writer who was very little read by Members of the Institution. He thought, however, it might be concluded from the discussion that such was not the case, and that Adam Smith was a writer much more studied by the Members than Mr. Ryde supposed. If he had time he should venture to conclude his remarks by quoting a passage from "The Wealth of Nations."

To continue the criticism of Mr. Ryde, he made the remark that the object of his Paper was to show that the taxes on real property in all cases ultimately fell on the owner. He begged leave to repeat a statement which he made nearly twelve months ago—that that was not the object of his Paper—his object was to show that the taxes ultimately fell on the owner in the case of agricultural land only, and that in the case of building-property there was always a part of the taxes which did not fall on the owner, but on the consumer in the case of a trade building, and on the occupier in the case of a dwelling-house.

The same opinion had been attributed to him by Mr. Eve. Therefore he repeated what the real doctrine was. The tax on the ground-rent was always incident on the owner. In the case of a house or trade building, the part of the tax which ultimately fell on the consumer or the occupier, as the case might be, was that part of the tax on the building-rent which was uniform over the whole country. It was only the differential tax between two areas within competitive distance which was reflected on the land. That was as demonstrable as any proposition in Euclid, and was clearly stated on page 292 of his Paper.

His friend Mr. Tuckett, to whom he was indebted for a general commendation of the Paper, was the next critic. Mr. Tuckett agreed that to pile up taxes on realty was an inequitable proceeding, but complained that he should have suggested what other descriptions of property should be laid under contribution. He (Mr. Mathews) had always been taught that it was the duty of everyone who proposed a readjustment of taxation to point out an alternative source from which the necessary public expenditure might be supplied. On another point Mr. Tuckett was entirely right in a criticism he had made. He (Mr. Mathews) had overlooked the Act of last Session, imposing, with certain important exceptions, a tax of 5 per cent. on land held in mortmain. That, he thought, was a flagrant violation of the second maxim of Adam Smith, that "the tax which each individual is bound to pay ought to be certain, and not arbitrary. The time of payment, the quantity to be paid, ought all to be clear and plain to the contributor, and to every other person."

He noticed that Mr. Tuckett agreed with the first suggestion that he made at page 315—"That the owners of property, upon whom so large a proportion of the local taxes

are ultimately incident, should have an equitable share in the election of those who levy the taxes and administer their expenditure." But he disagreed with the second suggestion —that the owner should be made liable for the actual payment of some part of the taxes. He (Mr. Mathews) believed it to be essential that the owners should be personally liable to payment. He did not think public opinion would allow a number of persons who were only indirectly interested in the payment of taxes to have any share in the representation.

The speeches both of Mr. Elliott and Major Craigie contained most interesting and valuable suggestions, and were entirely in accord with the main argument of the Paper. That argument was that when certain taxes had, for many generations, been levied on real property, it was a matter of small importance whether they were also levied on personalty or not. The property to which those taxes applied passed from generation to generation, and was sold from one to another, subject to the payment of those taxes, and no injustice was done. But by putting a new tax on a single description of property you reduced the value of the property by the capitalised amount of the tax—you imposed a fine, amounting to the capitalised value of the tax, on those members of the community who were holders of the property at the moment.

In all cases of new taxation there was only one equitable plan, and that was to tax every citizen in proportion to his ability. All new local rates ought, therefore, to be laid on personalty as well as realty. Mr. Ryde said the possessors of personal property were caught by the income-tax, but such was not the case. Take the instance of the education-rate. To that part of the cost of elementary education which was paid out of the general taxation the income-tax-payers con-

tributed, but that part which was levied on the rates the income-tax-payers escaped from.

In what way personal property should be brought under local contribution was, no doubt, a question of great difficulty. The difficulties had, nevertheless, been overcome in America. Mr. Tuckett had told them that the American taxation was trifling. In Cambridge, Massachusetts, the total taxation was $1\frac{1}{2}$ per cent. on the capital value, equivalent on a 5 per cent. property to 6*s.* in the £ on the annual value. Mr. Elliott had suggested that the plan upon which income-tax was paid by deductions might very conveniently be adopted in the case of local rating. It was a very remarkable fact that the plan pursued in America was a diametrically opposite one. He had before him a very interesting paper, which was at the service of any Member who liked to see it, a form which was issued to all taxpayers in the State of Massachusetts for making their returns. Where any property within the State was a taxable property, all charges on it escaped further taxation; if there were a mortgage on it the mortgage did not pay any tax as personalty. That was the opposite of the practice in this country in reference to income-tax. But a mortgage on real estate outside Massachusetts paid a tax, whether the property upon which the mortgage was placed was a taxable property or not.

The question of taxation of ground-rents, upon which several Members had spoken, was one scarcely within the scope of the Paper. There was no doubt, if a tax were laid on ground-rents already created by contracts under which the lessee had taken on himself the burden of paying the rates, their purchasable value would be reduced by the capitalised amount of the tax, unless an equivalent tax were

simultaneously laid on all other descriptions of property, personal as well as real.

It might be interesting to the Institution to know what JOHN STUART MILL thought of all such schemes of legal spoliation. Speaking of proposals for the exclusive taxation of realised property, he said, "Future buyers would acquire land and securities at a reduction of price equivalent to the peculiar tax, which tax they would therefore escape from paying, while the original possessors would remain burdened with it, even after parting with the property, since they would have sold their land or securities at a loss of value equivalent to the fee-simple of the tax. Its imposition would thus be tantamount to the confiscation for public uses of a percentage of their property, equal to the percentage laid on their income by the tax. That such a proposition should find any favour is a striking instance of the want of conscience in matters of taxation, resulting from the absence of any fixed principles in the public mind, and of any indication of a sense of justice on the subject in the general conduct of governments. Should this scheme ever enlist a large party in its support the fact would indicate a laxity of pecuniary integrity in national affairs scarcely inferior to American repudiation."

Having read that quotation from MILL, he would read a passage from ADAM SMITH, which would show how obsolete the opinions of that writer had now become in the general conduct of government, and with this quotation he would conclude his remarks—"Commerce and manufactures can seldom flourish long in any State which does not enjoy a regular administration of justice, in which the people do not feel themselves secure in the possession of their property, in which the faith of contracts is not supported by law, and

in which the authority of the State is not suffered to be regularly employed in enforcing the payments of debts from all those who are able to pay. Commerce and manufactures, in short, can seldom flourish in any State in which there is not a certain degree of confidence in the justice of government."

The Meeting then adjourned.

Paper 138 }
No. 235 }

THE GEOLOGY OF THE SURFACE IN ITS PRACTICAL ASPECTS.

By W. FREAM (Associate).

Read at the Ordinary General Meeting of The Surveyors' Institution, *Monday, May 3rd*, 1886.

MR. E. I'ANSON (PRESIDENT) IN THE CHAIR.

One of the most important results established by the unique series of investigations which have for so many years been in progress at Rothamsted is that a fertile soil is one which has accumulated within it the residue of ages of previous vegetation, and that it becomes infertile as this residue is exhausted. The history of agriculture throughout the world equally points to the fact that the soil must be regarded as a mine, or storehouse of fertility, and that in proportion as this fertility is drawn upon so does the soil become exhausted, though the final exhaustion may be indefinitely postponed by the judicious application of nitrogenous and mineral manures. It has further been demonstrated that, with respect to the most costly of all the elements which are purchased in fertilisers — namely, nitrogen, though much is carried away in the crop, yet much, and frequently very much, is commercially lost through being washed out in solution by the drainage waters, which have their source in the rainfall. It is not difficult to demonstrate that the natural fertility of a soil is largely dependent on its lithological character, for the varying proportions in which clay, sand, and calcareous matter enter into the constitution of a soil must powerfully influence

its capacity for the storing up, or rather the retention, of constituents of manurial value. The general characters and the variations of the soils of a country are, consequently, of high practical interest and importance.

Confining my observations chiefly to England and Wales, I think it may safely be asserted that the characters of the soils of this country are mentally associated with the nature of the underlying strata—of those, that is, which go to make up what is appropriately termed the "solid" geology. But the inquirer is not long in discovering that the ordinary geological map is not only an inefficient, but, not infrequently, even a misleading, guide to the character of the soils of any given district. He soon learns that the identity of colouring which denotes the outcrop of one and the same formation, however useful it may be geologically, is frequently of little or no value from an agricultural point of view. The broad band of Chalk, which is represented as stretching in a south-westerly direction from Norfolk into Wilts, affords no clue to the remarkable contrast which obtains between the deep stiff clay soil of the former county, and the thin light almost arid soil which occupies the surface of much of the latter. The ordinary geological map contains no indication of the equally noteworthy differences which exist between the soils resting upon the Oolites of the Yorkshire Moors, and those overlying the equivalent strata in the Cotteswolds of Gloucestershire and Somerset. These maps, in fact, show, and they show remarkably well, not what exists on the surface, but what there is beneath the surface. If England were suddenly stripped of its soils and subsoils, the appearance of its surface would then admirably coincide with the order of succession of the stratified rocks as pourtrayed on the geological map of the country. As it is, the more or less incoherent mass of material, which rests like a pall upon the underlying rock-masses, which varies so much

in its depth and its mineral character, in its texture and its colour, and which it is the main object of the agriculturist to explore and to work, though haply not to exhaust,—in a word, the soil—is conspicuous only by its absence. It follows that our ordinary geological maps fail at precisely the stage where they might be expected to afford most information to the agriculturist, and hence it is that such maps are seldom capable of being utilised as agricultural maps. A geological map is thus seen to be incompetent to serve as a map of soils, and all geological writers who touch upon the subject of the distribution of soils, and of their relation to the underlying formations, conclude with a caution and an apology,—a caution to the reader not to infer that the overlying soil is of a character dependent solely and exclusively on the nature of the subjacent formation, and an apology for the imperfect state of our knowledge respecting the distribution of the surface deposits.

The geological map of England and Wales is, in the main, based on the explorations of the Geological Survey of the United Kingdom. The work of this survey may be said to date back as far as the year 1832, when Sir Henry de la Beche (afterwards Director-General of the Geological Survey) was engaged in the preparation of the geological maps of the mining districts of Cornwall and Devon. The officers of the Geological Survey have made use of the maps of the Ordnance Survey, indicating on these, by appropriate signs and colours, the age and arrangement of the rocks comprised within the limits of each district.

It was not, however, till the end of 1883 that the Geological Survey of England and Wales, on the scale of one inch to a mile, was completed. This branch of the work has, moreover, been concerned only with the "solid" geology, with the deposits of river and marine alluvia, and with accumulations of peat. Other extensive deposits, of which

mention will presently be made, and which enter largely into the constitution of soils, are ignored, the fact being that the industrial and scientific importance of mapping these superficial accumulations was not recognised until comparatively recently. Geologists had not adequately grasped the extent and significance of these surface deposits, and the geological agencies involved in their production were not fully understood, during the earlier years of the field survey of the 1-inch map. In the light of fuller knowledge, however, the necessity of mapping the more or less heterogeneous accumulations of mineral matter or detritus which rest upon the denuded edges of the regularly stratified rocks beneath, became apparent, and accordingly, in 1871, the publication of what are termed the "drift" maps was commenced. Though for practical purposes it is not absolutely necessary to inquire into the origin of these drift deposits, a right understanding of the subject is, nevertheless, much facilitated by glancing ever so briefly at a very recent chapter, or page rather, in the geological history of England.

The Tertiary or Cainozoic period of the earth's history is, according to the present state of geological knowledge, divided into the following minor periods:—

4. Pliocene.
3. Miocene.
2. Oligocene.
1. Eocene.

The Eocene is represented by a series of strata in the Isle of Wight and Hampshire, but chiefly in the Thames Valley, the London clay being the most important. The Oligocene beds are restricted mainly to the New Forest and Isle of Wight areas. The Pliocene or Crag deposits are seen in the extreme east of England, in Norfolk and Suffolk, and they afford abundant palæontological evidence that, during the

period of their deposition in comparatively shallow water, the climate of this part of the globe was undergoing a gradual refrigeration. The cold subsequently became so intense that, over most of the British area, the heat of the summer sun was insufficient to melt the winter snows, and thus there gradually accumulated over much of Britain a thick and extensive ice-cap, similar to that which persists in Greenland to the present day. As the glaciation became more intense the great ice-sheet would increase in volume and in weight, and as it slowly flowed along the surface of the land it would produce a two-fold effect, firstly, in grinding up the ground over which it passed, and, secondly, in carrying with it, and stranding or depositing far from their place of origin, ice-worn blocks or boulders (erratics). In this way was accumulated the Lower Boulder Clay, a stiff clayey deposit full of transported blocks of stone, some of the latter enclosed in the boulder clay of Holderness, in Yorkshire, being derived from certain syenitic rocks in Norway, while fragments of granite, gneiss, and schists in the boulder clay of Norfolk also came from the higher latitudes of Northern Europe,—borne thence on the bosom of the ice-sheet.

As there are no rocks of Miocene age in Britain (those formerly referred to this period having, in deference to the opinion of Continental geologists, been relegated to the Oligocene), and as the Pliocene beds are of very local occurrence, it is inferred that much of this area was, during later Tertiary times, a land surface. The effect of long-continued pre-glacial disintegration upon this land must have resulted in the accumulation of not inconsiderable thicknesses of decayed or decomposed rock (soil), produced *in situ*, and this, before and beneath the advancing ice-sheet, would easily have been transported to localities far from the place of its origin, and thus have entered into the constitution of the boulder clay. After a long period of glaciation, depression

set in over the British area, very much of which was submerged to considerable depths beneath the sea, as is proved by the occurrence, at present elevations exceeding 1,000 feet, in various parts of northern and middle England and of Wales, of sands and gravels containing marine shells. Re-elevation then took place, the land emerged from beneath the sea, and for a time there appears to have been a return to conditions not altogether unlike those which prevailed before submergence. This theory derives confirmation from the fact that the marine sands and gravels are in places overlaid by the Upper Boulder Clay, another stiff, stony clay containing ice-worn stones, but differing from the Lower Boulder Clay in the presence of intercalated beds of sand, gravel, or silt, and in affording indications of a rude kind of stratification, due, perhaps, to minor oscillations of the land at about the level of the sea. This was followed by a further slow elevation, as is proved by the existence of raised beaches, while a simultaneous amelioration of the climate was accompanied by the retreat of the glaciers, which, as they receded, left their stony freight (moraines) behind them.

That, during the Glacial Period, there were many minor climatal and other physical variations is proved by the fact that even in the Boulder Clay itself there occur on different horizons beds of sand and gravel, deposits of fine clay, and layers of peat. Nevertheless, as far as geologists have been able to unravel the indications afforded by these superficial and ill-defined deposits, they appear to stand out in some such chronological sequence as the following, though one or more may be, and usually are, absent in any specified locality:—

4. Moraines, fluvio-glacial deposits, and raised beaches.
3. Upper Boulder Clay.
2. Middle Sands and Gravels.
1. Lower Boulder Clay.

It is these accumulations, often as heterogeneous in their structure as they were varied in their origin, which rest upon the stratified rocks as represented on a geological map, and which in many localities furnish exclusively the materials both of soil and subsoil.

The period, succeeding the Pliocene, during which the glacial drifts were scattered over much of the British area, is termed the Pleistocene, Post-Pliocene, or Diluvial. The last of these terms, though the oldest, is unsatisfactory, and its use is decidedly on the wane. It was given under a misconception—an erroneous idea that the glacial drift (then called Diluvium) was the residuum left by a great deluge. When little or nothing was certainly known about the origin of the glacial deposits, it was perhaps convenient to hide our ignorance by grouping them together under the single head of Diluvium, but there is no excuse now for the retention of the term. The Pleistocene period was followed by the Recent, Alluvial, or Human period, which brings us down to the present time. The subdivision of what is termed Post-Tertiary time into Pleistocene and Recent is, however, admitted to be exceedingly artificial, and is perhaps unwarrantable. Rain-wash or brick-earth, river and marine alluvia, lake-floors and peat-mosses, sand-dunes on the coasts and trail (or loess) in the valleys, are the kinds of deposits referred to the Recent period, though some of them, particularly in the south of England, may be much older, as, for example, the accumulations of rock-rubbish, known as "head," due to the disintegrating effects of severe frost. In fact, the true glacial drift, which is scattered pell-mell over so much of the British area, does not extend south of the Thames, and this affords the clue to the cause of the difference between the soils resting on the chalk area north of the Thames, and those overlying the same formation south of this river. The former consist of boulder clay, or

of glacial sands and gravels; they are not necessarily related to the underlying rock, and are good examples of what are known as *erratic* or *transported* soils. The latter, excepting in the river-valleys, are made up of the insoluble residue which is left after rain-water containing carbonic acid in solution has dissolved out of the chalk-rock most of the carbonate of lime which enters so largely—sometimes to the extent of 98 per cent.—into its composition; it takes the form of clay-with-flints, or of somewhat light loam, and is an apt illustration of what is meant by a *local*, a *sedentary*, or an *indigenous* soil, that is, a soil produced *in situ*. Here, then, are two examples of totally different soils, each resting upon the same formation; and I might point to the brick-earth which occupies the river-valleys in the Chalk of the south of England, and to the cold stiff flintless clay of the Lower Chalk, as two additional examples. By referring to other formations in the stratigraphical series, it would be possible to multiply these examples indefinitely, all tending to demonstrate that what is represented as one and the same formation on the geological map may, nevertheless, support soils of strangely dissimilar character in different localities. On the other hand, it is equally true that stratified formations of widely different lithological character may support soils of a very similar kind, owing to their being in each case covered, sometimes to a depth of more than a hundred feet, by boulder clay, or other detritus of the ice-sheet.

It should now be apparent that, for agricultural purposes, a geological map which in the main ignores—as geological maps usually do—the character and distribution of the surface deposits, is not of much value. But, it may be argued, a map showing surface geology alone would be incompetent to convey much, if any, information as to the subjacent solid geology, which is certainly too important to be lightly overlooked. This is true, and the obvious way to

overcome this difficulty is, where possible, to study the two maps—the solid map and the drift map—side by side; each map is complementary of the other, and a joint examination of the two is bound to throw a flood of light on the character of the soils of the district under inspection. I proceed to notice the results of a few such examinations, first premising that many of the "sheets" of the Geological Survey are obtainable in "quarter-sheets," each of the latter representing a rectangular area of about 200 square miles, the rectangle being about 17½ miles long by 11½ miles wide.

Quarter-sheet 96 S.W. occupies part of the Yorkshire area, the town of Thirsk being about 1 mile N.E. of the centre of the map, and the city of Ripon in the S.W. corner, 10 miles distant in a straight line. Across the solid map there extend almost in consecutive order the outcrops of the English stratified rocks, from the yellowish Magnesian Limestone of the Permian series on the west to the uppermost beds of the Middle Oolite on the east, the general strike being N.W. by N. to S.E. by S. The western side is occupied by an extensive though not uninterrupted outcrop of Magnesian Limestone. The Bunter is not seen, and there succeeds a fairly continuous band of Keuper Sandstone, about 5 miles wide, a narrow strip of this area being occupied by the alluvium and gravels of the Swale valley, and by a more extensive area of sand and gravel, of unassigned age, south of Thirsk. Passing still eastward we cross a band of Keuper Marl, its width nowhere exceeding 2½ miles, and the town of Thirsk resting on it. Then comes on the east a very narrow but persistent band of shale and marl of Rhætic age. An outcrop from 2 to 3 miles wide of Lower Lias Shale is next seen, and there follow in rapid succession beds belonging to the Middle and Upper Lias and to the Oolitic series. The solid map further indicates the position of peaty soils, river terraces and

alluvium, all regarded as of Post-Glacial age; in the index of colours, and therefore on the map, the boulder clay, and sands and gravels, referred to the Glacial Period, are not indicated. These latter it is the province of the drift map to show, and a most marked contrast is presented when the two maps are viewed side by side. The extensive outcrop of Magnesian Limestone in the west is almost lost to view, being reduced to a few local patches in the south, the greater part of its surface being covered up by Boulder Clay, though in its northern part glacial sands and gravels predominate. An area of some 3 or 4 square miles of peaty soil in the north-west is, of course, the same in both maps. The broad band of Keuper Sandstone is almost wholly masked either by boulder clay or by glacial sands and gravels. East and north of Thirsk the Lower Lias Shales are completely hidden by boulder clay, which extends across this part of the area in a fairly continuous band from N.W. to S.E., attaining a breadth of 4 miles in its widest part N.E. of Thirsk. In the north-east corner of the map a triangular area of about 15 square miles is quite free from drift, and is accordingly represented the same in both maps. An example or two may serve to show the instructive character of the drift map:—For some distance around Thirsk the solid map might lead one to suppose the surface was *marl* (Keuper Marl); as a matter of fact it is chiefly *sand and gravel*, and it is this which forms the basis of the agricultural soil. Again, north and west of Ripon the solid map indicates the presence of the yellow Magnesian Limestone, whereas this district is completely covered with boulder clay.

Quarter-sheet 51 S.E. embraces portions of W. Suffolk and S. Cambridgeshire. In the north-east corner is Bury St. Edmunds, while on the same latitude on the west side is Newmarket. The solid map represents the whole area as

Chalk, excepting a few narrow patches of alluvial deposits extending along the banks of the Lark and other rivers; hence the map is in only two colours, denoting Chalk and Alluvium respectively. The somewhat monotonous effect is entirely changed on the drift map, in which six additional colours are called into requisition, representing severally:—

Loam	Recent and Post-Glacial.
Gravel	
Gravel of Old Rivers	
Boulder Clay .	Glacial.
Gravel and Sand	
Brick-earth . .	

Two-thirds, perhaps even three-quarters, of the area, is now seen to be occupied by boulder clay, the portion not so covered being, in the main, a triangular area around Newmarket; this surface is still Chalk, though varied by considerable patches of gravels of old rivers. Many of the elongated deposits of alluvium of the solid map are flanked by Post-Glacial gravels in the drift map. The most extensive deposit of glacial gravel and sand occupies an area lying south and west of Bury St. Edmunds, while north and east of this town a line of Chalk outcrop still remains visible. Loam is of very local occurrence.

Quarter-sheet 1 N.W. includes South-West Essex with parts of Herts and Middlesex on the west. The diagonal from N.W. to S.E. extends from Hoddesdon to Brentwood, while the middle line from E. to W. passes through Waltham Abbey in the west and rather to the south of Chipping Ongar in the east. On the west side, from north to south, appear Cheshunt, Waltham Cross, Edmonton, and Tottenham. Most of the forests of Epping and Hainault are embraced in the south and south-west. On the solid map are represented:—

Post-Glacial Deposits	Alluvium.
Eocene	Bagshot Beds { Pebble Beds. / Lower Bagshot Sands. }
	London Clay.
	Reading Beds.

Nearly the whole area is represented as London Clay, the chief exception being a band of alluvium extending on either side of the River Lea, which flows southward through the marshes of Hoddesdon, Nasing, Cheshunt, Romney, Enfield, Edmonton, Tottenham, and Mitchley. A narrower band of alluvium marks the more sinuous course of the River Roding flowing west and south from Chipping Ongar. Around Brentwood, more particularly to the south, are seen the Bagshot Pebble Beds, while midway between Brentwood and Chipping Ongar there is a patch, about the same size, of Lower Bagshot Sands. The only outcrop of the Woolwich and Reading Beds (the Plastic Clay of the older books) is confined to an inconsiderable area south-east of Hoddesdon. In the corresponding drift map the following additional superficial deposits are indicated :—

Post-Glacial Deposits	Brick-earth. / Gravel.
Glacial Deposits . .	Boulder Clay. / Gravel, Sand, and Loam.
Of unassigned age .	Pebble Gravel. / Hill Gravel.

Most of the north-east and a considerable part of the south-east of the area are seen to be covered with Boulder Clay. The Epping and Hainault forest regions still retain their surface of London Clay. Along the west bank of the Lea, however, the London Clay is covered by a band of post-glacial gravel gradually widening from north to south, and flanking on the west the river alluvium. Many disconnected

patches of hill-gravel, pebble-gravel, and brick-earth are irregularly distributed over the surface, in all parts of the area.

The three maps which have now been discussed were specially selected as affording good examples of the difference between the solid geology and the surface geology of the districts concerned. It will be useful now to examine the maps of an area south of the Thames, and for this purpose sheet 3 (not quarter-sheet) is taken. It comprises East Kent, Canterbury being in about the middle of the area; Margate, Ramsgate, Deal, and Dover on the east; Faversham and Ashford on the west; and Sittingbourne still farther west. From west to east, across the middle of the land area, stretches a broad band of Chalk, flanked on the south-west by the Gault and Lower Greensand Beds, and the Weald Clay. To the north, excepting in the Isle of Thanet which is chiefly Chalk, are irregular and somewhat detached outcrops of the older Tertiaries, comprising the Thanet Beds, Woolwich and Reading Beds, Oldhaven Beds, London Clay, and Lower Bagshot Sands, with considerable tracts of alluvium south of Sheppey, and west and south of Thanet. This solid map also indicates (1) blown sand, (2) shingle, (3) brick-earth, and (4) gravel and sand. On the drift map four additional colours are employed to denote other accumulations of brick-earth, and of gravel and sand, together with "loam on the Chalk," and "clay-with-flints on the Chalk," the two last-named deposits being derived from the weathering of the local chalk-rock. The broad area of Chalk is now seen to be extensively diversified by numerous irregular transverse bands, chiefly of clay-with-flints, but partly of loam. Deposits of brick-earth are plentifully indicated on the Tertiary strata in the northern part of the area; they are less abundant on the Gault and Greensand Beds in the south, and still less so on the Chalk itself. Though the drift map presents a very

marked contrast with the corresponding solid map, the whole area is, nevertheless, entirely free from the Boulder Clay and from the Glacial Sands and Gravels which constitute so noteworthy a feature in the surface geology of much of the area north of the Thames.

The examples which have been given must suffice to show in what important respects the drift maps differ from the solid maps, and further to what extent useful agricultural information respecting the soils of any given locality may be obtained from a comparison of the two maps. But the extensive application of this mode of inquiry is, for the present, out of the question, owing to the backward state of the drift survey of England and Wales. As already stated, the survey of the 1-inch map of the solid geology was completed in 1883, whereas the survey of the surface geology was only commenced in 1872. So far the drift survey has been mainly restricted to the counties, or portions of the counties, on the eastern seaboard. Hitherto, the drift maps of only two complete counties, Essex and Suffolk, have been published, while drift maps of portions of the counties of Northumberland, Durham, Yorkshire, Lincolnshire, Norfolk, Cambs, Hunts, Beds, Bucks, Berks, Herts, Middlesex, and Kent, have also been issued to the public. On the western side portions of Lancashire, Cheshire, Derbyshire, Flintshire, and Denbighshire, are procurable as drift maps. Much of the area of the northern counties, all the southern and western counties, nearly the whole of the midland counties and of Wales, are unobtainable as drift maps, and over the greater part of this area the drift survey has not even been commenced, though it has been completed in the northern counties. The mapping of these drift deposits is a slow and laborious process, even in the hands of the accomplished officers of the Geological Survey.

It is interesting here to notice that at the time of its

inception the Geological Survey was, on the one hand, intended to advance geological science by the production of an accurate and detailed geological map of the United Kingdom, with the necessary sections and descriptive memoirs; and, by the collection of a full series of specimens, to illustrate the mineralogy, petrography, and palæontology of the various geological formations. On the other hand, it was designed to be "a work of great practical utility bearing on agriculture, mining, road-making, the formation of canals and railroads, and other branches of national industry." However valuable and important may be the assistance which the Geological Survey has rendered to the mining and engineering industries, the greatest service it can render to agriculture, namely, the publication of a reliable map of soils, has yet to be accomplished, and, at the present rate of progress, it is bound to occupy many years.

It may be objected that the 1-inch map is on too small a scale to be of much use to the Surveyor who seeks information respecting farms and estates, but this objection is more apparent than real. By taking a sheet of paper and cutting from the middle 1 square inch, areas of 1 square mile can be brought into view by laying the sheet of paper on the map. The area thus isolated or exposed, 640 acres, is about that of a fair-sized farm, and, in the maps I have brought under notice, I find that sometimes as many as half-a-dozen different colours can be included in the square inch.

A more serious defect in the 1-inch map is the absence of contour-lines. It must be remembered that, not only the mineral composition, but the altitude, the aspect, and the slope are important factors in controlling or determining the character of a soil. Two soils of precisely identical lithological composition may, nevertheless, differ widely in their agricultural value; for the one may associate with a high altitude, a northern aspect and a rapid slope, while the other

at a lower level may be favoured by a southern aspect and a gentle slope; the former will receive less heat, and its "fine earth" will be more liable to be washed away in the rain-water that flows along the surface. Contour-lines appeal eloquently to the eye, telling of abrupt slopes as they close up together, and of gentle declivities as they recede from each other. They are capable of showing, at a glance, the altitude, the aspect, and the slope. In connection with this point, however, it may be well to add that the 6-inch Ordnance map shows the contours, so that in cases in which the geological solid map, the drift map, and the 6-inch Ordnance map of a district can all be inspected together, it is of course possible to acquire very much valuable information about the soils of a farm, or of an estate, without actually visiting the latter. Nor must it be forgotten that to the geologist the outcrops themselves of the different strata, as indicated on a map, go a long way to compensate for the absence of contours.

But, even with the three maps just mentioned, there would still be a link missing. The geological map shows what are the underlying strata, the drift map indicates the mineral matter which is actually at the surface, and from the decay of which the soil is formed. But the drift map affords no information as to the thickness or depth of the superficial deposit, nor as to whether there is, or is not, any other deposit lying between the superficial one and the stratified rocks below. This is obviously a very important matter in connection with water-supply and drainage. Thus, suppose the drift map to indicate a surface accumulation of glacial sands and gravels resting upon what the solid map represents as an outcrop of the Chalk, it might be hastily inferred that from the surface downward there were only permeable strata. But it would be quite possible for the sands and gravels to rest upon the Lower Boulder Clay, only

the latter being in contact with the subjacent Chalk; in this case the impermeable clay would resist the downward passage of the water derived from the rainfall on the sands and gravels, and land springs and surface wells would be the result. On the other hand, in the case of boulder clay resting upon sands and gravels, and these in turn upon the solid (let us suppose impermeable) rocks below, the drainage of the clay soil might be disposed of by sinking absorption wells into the intervening permeable sands and gravels. The drift maps, by denoting the limits or boundaries of the surface accumulations, indicate clearly enough where these deposits thin out at the surface and give place to others on the same horizon, and to some extent it is discoverable from them whether more than one kind of drift deposit exists between the soil and the underlying solid rock. It would be very useful to know in the case of surface accumulations what, if I may so express myself, I might term the contours of the underlying or deep face of such deposits, as then their varying depth could at once be determined. The late Mr. Trimmer, who devoted considerable attention to the study of soils, and since whose time the subject has been almost at a standstill, published in 1850 a 10-page pamphlet, now difficult to obtain, bearing on the title-page: "Proposals for "a Geological Survey specially directed to Agricultural "Objects. By Joshua Trimmer, F.G.S., at present attached "to the Geological Survey of Great Britain." His chief object was the preparation of geological maps on which would be shown "those superficial deposits which are "omitted from ordinary geological maps, but which are, "obviously, of the most importance to the agriculturist." He constructed a table in which the italicised letters of the alphabet are made to denote the various kinds of soils, whether siliceous, loamy, clayey, peaty, marly, or calcareous,

with the varieties of each. Then, such a symbol as this on the map,—

$$\frac{f'\ 18}{gr.\ 10}$$
$$s.\ 20$$

would mean that, at the point where the sign occurs, "the "soil consists of erratic sandy loam 18 inches deep, on a sub- "soil of gravel 10 feet deep, and a substratum of sand 20 feet "deep." These conditions may vary within very short distances, and even in the same field, to

$$\frac{f'\ 6}{gr.\ 3}$$
$$s.\ 20$$

or "erratic sandy loam 6 inches, on gravel 3 feet, and sand "20 feet deep." They may even vary to the following, where the surface soil is all that belongs to the erratic class,

$$\frac{f'\ 6}{ch.\ 30\ +}$$

"erratic sandy loam 6 inches, on chalk, of depth undeter- "mined, but more than 30 feet." The following example shows the manner in which a local or indigenous soil would be noted :—

$$\frac{f\ 6}{sn.\ 30\ +}$$

that is, "local sandy loam 6 inches, on sandstone, of depth undetermined, but more than 30 feet." It will be noticed that the units of the top line are always inches, and of the other lines feet. I have been tempted to revive these sug-

gestions of Trimmer, because it occurs to me that Surveyors might usefully supplement the published drift map of any area under their charge by annotations of this kind; well-sinking, deep drainage, and the like, would afford the necessary data.

Trimmer enunciated comprehensive and definite views respecting agricultural geology, which he considered should embrace the classification of soils, both as regards their lithological character and their mode of origin; their horizontal and vertical distribution; the occurrence of mineral fertilisers, and of materials suitable for building, draining, and road-making; springs and water-supply; the depths and distances of drains; and the relation of soils to the distribution of population. He estimated that an examination of the soils of England and Wales for the purpose of determining their variations, and their relations to the rock formations of our geological maps, would require the constant work of ten Surveyors for thirty years; and, as I have already shown, his experience led him to the conclusion that not the mere surface alone, but the thickness and lithological character of all the beds between the solid rock and the soil, should be indicated.

Though the execution of what may be termed the agricultural work of the Geological Survey still remains almost in its incipient stage, the original impetus which in this country geological investigation received from agriculturists is a pleasing circumstance to remember. In the bygone days in which England possessed a Board of Agriculture,—a department which will ever be associated with the name of Arthur Young,—that Board commenced work that, although suspended when the Board became defunct, was nevertheless of such economic importance that more than half a century later it was in effect resumed by the present

Geological Survey. On the high testimony of Conybeare and Phillips we read that, "Between 1790 and 1800 "several volumes of reports were published by the Board "of Agriculture, many of them containing much local geo- "logical information; and to this Board must undoubtedly "be ascribed the honour of having produced the earliest "geological maps of any part of England, for its first series "of reports, published in 1794, contains very adequate "geological maps of the North Riding of Yorkshire, of "Derbyshire, and Nottinghamshire, and a less perfect one "of Devonshire. . . . The same Board has also (1813) "given useful maps of Sussex, Surrey, Berks, Bedford, "Gloucester, Wilts, Lincoln, Durham, and Cheshire."— "Introduction to Outlines of Geology of England and Wales." The Journal of the Royal Agricultural Society of England, commenced in 1840, contains memoirs on the agriculture of all or most of the English counties, and in these there may be found many details of practical value concerning the geology of the surface. This historical retrospect, brief as it must be, would be culpably incomplete were it to omit the name of William Smith, the Oxfordshire yeoman, whose eye was the first to discern the order of succession of the British stratified rocks, and whose pencil drew the first geological map of England and Wales. The Members of this Institution can never forget that the "Father of English Geology" was a surveyor and a land-agent, and that it was in the discharge of the duties of his profession that he made those remarkable observations which have resulted in constituting Geology the intensely English study it has since become.

The formation of soils, both local and transported, is still in progress; it always will be so long as dry land exists, and the epigene or surface action of meteorological agents con-

tinues. The transported soils still in process of formation are chiefly either accumulations of rain-wash, or brick-earth, on the lower valley slopes; or alluvium spread out on the banks, or near the mouths, of rivers. The fertility of alluvial soils is proverbial, and it arises from a combination of both physical and chemical properties. The fine state of mechanical subdivision, on the one hand, and the varied mineral character of the rocks whence the detritus is derived, on the other, contribute to this end. The Severn, which rises among the Lower Silurian rocks, and derives its waters from that and nearly all the intervening strata up to the Lias, deposits in its lower reaches an alluvium of an extremely mixed mineral character well displayed in the fertile vale of Berkeley. Within certain limits, it may be taken almost as a geological axiom that the fertility of a soil will be greater the more varied is its lithological character. A nearly pure clay, a nearly pure sand, or a nearly pure limestone, would be of little or no agricultural value. Where soils in any degree meriting these appellations occur, it is a well-known fact that they ameliorate as they approach or merge into other soils, though these latter may, in their unadulterated condition, be of an equally undesirable character. It is quite unnecessary to enumerate the many recorded cases of marked fertility of the soil along the common line of outcrop of two beds, each of which, by itself, supports soils of but an indifferent character—the Greensand and the Chalk, the Lias Limestone, Sands and Clays, and other instances, will at once suggest themselves. But it is worth remarking that many familiar and well-approved agricultural operations, such as chalking, liming, marling, claying, warping, and even paring and burning, which have for their object the amelioration of the soil, may be regarded merely as efforts to bring about artificially what, in the case of alluvial soils, is effected

naturally. The incorporation with any soil of mineral matter differing from it in composition and in texture will generally result in bringing it nearer to the character of the ideal loam.

The influence of the underlying solid formation on the superjacent soil must obviously be controlled to some extent by the circumstance as to whether the soil is a local or a transported one. In the case of deep accumulations of boulder clay, the effect of the underlying rock is reduced to a minimum, and boulder clay soils, resting on very different formations, may be closely similar in their properties and capabilities, variations in contour, aspect, and geographical position, rather than in the solid geology beneath, being then the dominating factors. But that the character of the underlying solid rock is capable of asserting itself is evidenced in, for example, the case of the Old and New Red Sandstones and Marls, the addiction of orchard fruit-trees to which is as characteristic a feature in Scotland where the Old Red in the Carse of Gowrie is masked by boulder clay or till, as it is in Herefordshire, Gloucestershire, and Devonshire, where the soils are of more local origin. Below the southern limits of the Glacial Drift, local soils are the rule rather than the exception. They originate from the decay of the solid rocks, and, in the Oolites of the Cotteswolds, it is sometimes possible to see sections in which the gradations from the solid rock below into the loose friable, though often brashy, soil above may be distinctly traced. In the case of the Carboniferous Limestone, and of the limestones of the Lias, Oolites, and Cretaceous series, in the south of England, it is, however, the residue from the chemical, rather than that from the mechanical, agents of disintegration, which goes to form the soil. The solvent action of rain-water containing carbonic acid in solution results in the removal, in the drainage waters, of the carbonate of lime of which these calcareous

rocks mainly consist, the aluminous or earthy residue constituting a soil which is almost free from carbonate of lime. The analysis of the soil of an arable field on the chalk slopes in South Hants, in a locality where the whitish chalk-rock is within half a foot of the surface, gave only 15 per cent. of carbonate of lime; and yet to plough more than about four inches deep would result in bringing up enough chalk from the subsoil to injure the soil to such an extent that it would require the lapse of a number of years to restore it to its former condition. On the lower levels of the slopes of the Chalk Downs, where the soil formed *in situ* receives additions from that which rolls down the slopes, but yet where all the soil is the offspring of the chalk-rock, the application of chalk to the land is a familiar part of farm practice, and was largely resorted to during the recent severe winter. Where the limestone soils are under grass, the covering of herbage protects the land from further mechanical degradation, and checks the denudation of the surface caused by the removal of rain-wash, but it cannot check solution; indeed, the presence of decaying vegetable matter enriches the interstitial air of the soils in carbonic acid, so that the rain-water, becoming more highly charged thereby, acquires additional solvent power. The humic acid of all vegetable soils is likewise a solvent which must not be overlooked, though not much is known on this point. The chemistry of the carbon of the soil is, indeed, an almost unexplored field of investigation, still it is important to remember that the carbon of the soil is the source of much of the carbonic acid of soil-water. As a mechanical agent—that is, mechanical as regards the effect produced—in the disintegration of soils, the earthworm is equally active both on arable and on pasture land, but in view of the work the plough does on arable land it is, perhaps, entitled to a place little inferior to

that of the earthworm as a geological agent. A tender and susceptible surface of soil is laid bare when the moist furrow-slice is exposed to the air.

A full knowledge of the nature and distribution of the superficial deposits is a necessary preliminary to a thorough comprehension of local conditions favourable to water-supply and drainage. Water derived from surface springs is always more or less open to suspicion, and the recent progress of medical and sanitary science has indicated clearly enough the nature of the dangers which may lurk in drinking-water obtained from such sources. The growing density of the population is, even in rural districts—perhaps I ought to say *particularly* in rural districts—calculated to increase rather than to diminish this source of danger. Cases in which shallow wells have run dry when adjacent cesspools have been abolished are by no means hypothetical, and filtration through a few feet or yards of porous, sandy or gravelly, rock is utterly inoperative against organic poisons. The establishment or maintenance of ponds is another important matter, especially in agricultural districts; it is a circumstance which is largely dependent on the character of the soil and subsoil, and on the nature of the available sources of water-supply.

The unhealthy character of some districts is associated with the nature of the soils, and it may be regarded as an established fact that certain classes of diseases are specially addicted to certain soils. On soils pervious to water the prevailing diseases are of the enteric or typhoid type; on impervious soils they are consumption and other lung diseases, and rheumatism. In the former case foul drinking-water obviously suggests itself as the medium of contagion, for when the level of the ground water is low percolation is free, and then it is that most of the zymotic diseases are

rife. Professor Pettenkofer's continuous daily observations on the height of the ground water at Munich demonstrated that when the ground water fell the death-rate rose, typhoid fever in particular inducing fatal results. Not long ago Mr. Baldwin Latham prepared a diagram showing the connection between low ground water and typhoid fever at Croydon. The ground air, moreover, is as important from a hygienic point of view, particularly in relation to dwelling-houses, as is the ground water. The quantity of ground air varies with the nature of the soil, being least in clays, more in loams, and most in sands or gravels; it varies also with the quantity of moisture in the soil, and, in any given soil, it approaches the maximum when the ground water is at its lowest. The circulation of air in the soil is greatly influenced by the temperature and pressure of the atmosphere, and a falling barometer is a danger signal bidding us beware lest the offensive gaseous emanations from defective drains and cesspits should be given off at the surface of the ground, and, perchance, beneath the dwelling-rooms of a house, where the draught caused by fires would aid in determining the course of the effluvia. Dr. J. W. Tripe, Medical Officer of Health for Hackney, has traced the path of injurious gases through more than 30 feet of loose soil. Some years ago, Mr. G. J. Symons, F.R.S., Secretary of the Royal Meteorological Society, advocated the collection, by a commission of experts, of a complete statistical record of the health-rate, death-rate, geology, climate, water-supply, drainage, and general conditions of all our mineral water, sea-bathing, or pure-air resorts; and he maintains that the collection of such statistics would have both direct and indirect beneficial effects infinitely beyond the cost of the inquiry. The temperature, both of soil and of ground water, is obviously a matter of importance.

The reason that sandy and gravelly soils have usually received town populations before clayey ones—a fact which was well illustrated during the settlement of the metropolitan districts—is that, on the former, water was as easy to obtain as, on the latter, it was frequently difficult; the sanitary differences between the two kinds of soil are branches of very recent knowledge. I once spent some time in an endeavour to trace a connection between the distribution of foot-and-mouth disease and the nature of the soil, and attribute the failure of the attempt to an insufficiency of knowledge respecting the characters of local soils, on the one hand, and to the disturbing element introduced by the facilities of railway transport, on the other. So intimate is the relation between the geology of the surface and the conditions controlling health, that the University of London in its "Examination in Subjects relating to Public Health," which is open only to its Graduates in Medicine, requires candidates to give evidence of a knowledge of "Geology, "as regards general knowledge of Rocks, their conformation "and chemical composition, and their relation to underground "Water, and to drainage and sources of Water-supply." Among legislative enactments, the Rivers Pollution Prevention Act is not without interest and significance in the same connection.

The disposal of rainfall is so intimately associated with the character of soils, that here again the geology of the surface is of paramount importance. Although it is estimated that in such a country as ours about one-third of the rainfall is lost by evaporation, another third flows from off the surface into the streams, while the remaining third passes underground, yet the actual amount absorbed in any given locality is powerfully influenced by the nature of the soil and subsoil, and varies accordingly. Stiff clay soils

absorb least, light sandy soils most, while between these two extremes are all gradations. In the case of many deep wells, it is owing to the friction and other resistances met with in the rocks constituting the solid geology that the effect of the winter rainfall in raising the water of the wells to the highest level is not experienced till spring or early summer; conversely, prolonged summer drought shows its most marked effect in such wells in autumn or early winter. It is estimated that it takes, in the case of the Hertfordshire Chalk hills, about sixteen months for the underground water to travel from the central area to its outlet in the perennial springs which feed the river Lea. That is to say, supposing no rain fell for sixteen months, it would take that time before all the springs of those underground water-stores were exhausted.—(Prof. Prestwich.)

But there is another, and a very interesting aspect in which the disposal of rainfall may be viewed. Sir John Lawes and Professor Gilbert published three years ago a comprehensive table showing the quantities of nitrogen, as ammonia and nitric acid, contained in the rains of various localities in Europe. The amounts of nitrogen estimated in pounds per acre per annum, ranged from 1·86 to 20·91, some of the determinations being made near towns and some in the open country; the mean being 10·23 pounds of combined nitrogen, in a mean rainfall of 27·03 inches. They further estimate the amount of combined nitrogen coming down in the measured aqueous deposits from the atmosphere at probably not more than, if as much as, 5 pounds per acre per annum in the open country at Rothamsted, Herts. To supply this quantity of nitrogen would require 31 pounds of nitrate of soda, which at the current price of about £11 a ton would cost 3*s*. Supposing the rainfall in the agricultural districts of England to bring down annually the same quantity of

nitrogen per acre as does the rainfall at Rothamsted—and this seems a very fair assumption to make,—it would appear that the atmosphere confers on the soil a gift of about 3*s.* worth of nitrogen per acre per annum. What use the soil can make of this will depend jointly upon three conditions, namely, the lithological character of the soil, the quantity of water which flows from off the surface as compared with that which is absorbed, and the presence or absence of a growing crop. Conditions are frequently, perhaps always, such that more, usually much more, than the whole of the nitrogen received in the rainfall is lost in the drainage water. Thus, in the experimental wheat-field at Rothamsted, the estimated loss by drainage, reckoned over a period of thirty years, was from 10 to 12 pounds of nitrogen per acre per annum, and this from land receiving no nitrogenous manure. With 43, 86, and 129 pounds of nitrogen applied as ammonium-salts, in most years autumn sown, the estimated loss was 19, 31, and 42·4 pounds; but, in ordinary agriculture, with a larger proportion of the nitrogen supplied in farmyard-manure or animal-manures, with ammonia or nitrate used in smaller quantities, and with a variety of crops covering the ground with vegetation for longer periods of the year, the loss of nitrogen per acre by drainage would be considerably less. To what extent the nitrogen of the rain is capable of protecting, as it were, the nitrogen of the soil from being washed out it is hardly necessary to inquire; it is probably of little or no use in this way, its chief value, no doubt, being the readiness with which it can be assimilated by a growing crop, provided there be one present. Moreover, it must not be forgotten that even in the most favourable circumstances the amount of nitrogen brought down in the rainfall is utterly inadequate to supply the quantities yielded in different crops, these being dependent upon the soil and not upon the atmos-

phere for their nitrogenous food. But this brings me back to the subject with which I started—the fertility of our soils; it is one with which the welfare of England is so intimately associated, and so inseparably bound up, that it may, I trust, be accepted as sufficient apology for my bringing under your notice the considerations contained in this Paper.

Mr. E. P. Squarey (Vice-President) said he rose with very great pleasure to propose a vote of thanks to Professor Fream for his most interesting and valuable Paper. He was afraid to call to mind the number of years that had elapsed since he ventured in that Hall to read a Paper upon the relations of geology to agriculture. That Paper possessed the merit, whatever else its value, of eliciting from the late Mr. E. J. Smith, whose loss all deplored, and from Mr. Wm. Sturge, two most instructive and interesting Papers. He mentioned this to show that the subject was not altogether new to the "Transactions" of the Institution.

The author had spoken, he thought, in terms of undeserved disparagement of the earlier maps of the solid geology as compared with the "drift" maps now being issued to meet the modern demand for a survey of the kind. To adopt an analogy from animal physiology, the maps of the solid geology bore the same relation to the "drift" maps that the bony skeleton bears to the complicated covering of flesh, skin, and cartilage with which it is clothed, forming the basis upon which its superficial characteristics are moulded and built up. Both classes of maps were most useful in their way, and each was the necessary complement of the other.

He (Mr. Squarey) confessed to believing still that the solid geology corresponded with certain general qualities of the soil over the various formations, and he believed that

persons of experience in that Hall would agree with him that, if they were told they were going into a county where oolite abounded, they would be able to form general conclusions as to the character of the soil they were going to inspect. Look at the map of England on the wall, and take, for example, the chalk formation running from the south-west up to Norfolk and Yorkshire. It was, no doubt, true, as Professor Fream had stated, that there were considerable variations in the character of that chalk; but, speaking generally, his knowledge of the district overlying that formation would indicate to his mind pretty closely what he would find over the greater part of the area; and the same held good with respect, say, to the great oolite formation.

On the other hand, there were districts, like some parts of Kent, where the surface of the chalk was overlaid with soils of quite another character, and entirely wanting in carbonate of lime; but a survey so complete as to enable a Surveyor to say at once, by looking at the map and without inspection, that this or that value attached to a particular district, was, in his opinion, impossible, for differences in the quality of the soil (though the general character might be identical) were frequently met with in various portions of the same field, though these differences were perhaps due as much to mechanical as to geological causes.

There could be no doubt that the subject dealt with in the Paper was of the utmost value to Surveyors in its scientific aspects, and perhaps still more so in its practical bearing upon the pursuits in which they were engaged. Wisdom had been defined by Schiller as—

> "* * * To some a goddess great,
> To some a milch-cow of the field.
> Their wisdom is to calculate
> What butter she will yield."

It was in the latter aspect that Professor Fream asked them to regard the science—to see what interest it would yield for the time and study bestowed in examining its secrets.

He had expected that the author would touch a little more in his Paper on the effects of denudation, especially on the chalk formation, where there existed wonderful varieties of soil within the distance of a few yards. This was the case in his own part of the country, and he had been in the habit of attributing these variations to the effects of denudation, not only in the geological sense, but to the denudation going on from day to day through the action of the rainfall; for Professor Fream probably concurred with him that the stronger loam, with flints, was to be found, as a rule, on the tops of hills or on the northern slopes; whereas the southern slopes of hills were almost invariably of a weaker soil, and were closely allied to the chalk formation. The map of the valley of the Thames, on the wall, showed the London clay resting on the northern slope of the hills, and as denudation took place, this clay and the stronger soils remained untouched; whereas, on the south, the soil had become thinned out by the same cause, and by the terrible rainfalls, to which we were now happily strangers. He might mention one circumstance to show the effect of rainfall under variations of climate. When in America, in the year 1882, he visited the centre of one of the battles fought between the Northern and Southern States, and going on to the escarpment of the "Look-out Mountain," where one great battle was fought by "fighting Joe Hooker," as he was called, he was shown the earthworks by a man who had fought in the battle. The line of defence was still very apparent, the earthworks being, he should imagine, nearly as high as that Hall, and of good strong keuper marl

soil; but in consequence of the intense heat of the summer, no grass would grow there, and the bare surface of the marl being exposed, he believed that in 20 years the whole of the earthworks erected by the Confederate army in 1872 would be obliterated. He told his guide that he lived near an old town where similar earthworks had stood since Cæsar's time, and were likely to stand for hundreds of years, because they were covered with grass.

Mr. J. Lucas (Professional Associate) said he had great pleasure in seconding the vote of thanks to Professor Fream for his most able Paper. The subject of "the geology of the surface" was a very large one indeed, even when limited to "its practical aspects," and he found on reading the Paper, which was only put into his hands a short time ago, that the subject was by no means exhausted, although the amount of ground that was covered by the Paper was very considerable. He had made a few notes on the proof in the course of the reading, and would first point out that "the varying proportion in which the clay, sand, and calcareous matters enter into the composition of the soil," as affecting its capacity and so on, was a subject which was first scientifically treated, apparently in the year 1815, by Gustav Schuebler.*

He observed that Professor Fream made use of the saving word "mentally," when he said in his Paper "I think it may safely be asserted that the characters of the soils of this country are mentally associated with the nature of the underlying strata." He had given them sufficient evidence in the subsequent parts of his Paper that it was not so in fact, and as he (Mr. Lucas) had happened to have

* Lettre au Prof. M. A. Pictet, sur l'analyse Physique des Terres, Geneva 1815, 8vo.

"milked the cow" referred to by Mr. Squarey, for a period of 20 years, he might say that it was by no means the case. The broad bed of chalk was taken as an example, and a very good example it was, of the great varieties of soils that might overlie the same colour in ordinary geological maps. He happened to be intimately acquainted with a very large range of that line of chalk from the river Cam, in a south-western direction, knowing every inch of it as far as the Thames; and in the neighbourhood of the Cam and over part of Essex, typical blue boulder clay of a very stiff character abounded; but on tracing it down in the direction of Wiltshire it disappeared, and a great variety of other surface deposits came on, looking very confused in the drift map, but really very simple indeed. Kalm, in 1753,* gave a section of the surface deposits overlying the chalk of Little Gaddesden, Herts. There were two principal plains of gravel, one which was generally coloured a light pink, and occupied a contour-level of about 250 feet, and which he had always mentally referred to as "the 250 feet plain," and another which was contained in the Government map—a dark red, which lay at a level of about 300 feet. Therefore there was a considerable difference in the level of the light and dark pink gravel and this served to distinguish them.

In reference to the higher-lying gravel, he should mention that there was a hill to the north of Farnham which rose 625 feet, and which was covered by an outlying cap of very old flint-gravel. The flints were mostly angular, though some were rounded; but it was very clean gravel, and since 1836 the town of Farnham had been supplied with water from the springs oozing out of that gravel. There were many other patches of the same date turned to account, in

* "En Resa til Norra America," Stockholm, 1753, vol. i., p. 253.

various places, for water-supply for farm purposes; but he knew of no other instance where it was used for the supply of a town. Professor Fream went on to say, in his Paper: "It follows that our ordinary geological "maps fail at precisely the stage where they might be "expected to afford most information to the agriculturist." He could only say, speaking for himself as having assisted for some years in the Geological Survey, that he could not contemplate, and he believed none of his colleagues ever contemplated, a geological map for agricultural purposes—in fact, it was a new light to him that it should ever be expected to be so used. But, in all probability, the original maps had some design of the kind, for it so happened a few days ago, on buying a copy of the second edition of "Phillip's Mineralogy" of 1819, which had never been cut, there happened to be in it the original advertisement of Smith's publications, including a geological map of England and Wales which showed that it was in Smith's mind that varieties of soil would be communicated by variations in the substrata.

Then, in regard to the geological survey maps, it was by no means a sufficient description of them to say that "by appropriate signs and colours" they indicated "the age and arrangement of the rocks comprised within the limits of each district." What they indicated was, first of all, the boundaries. The first thing was to draw the boundary, colour it in some way, and put a sign upon it, and show the area of the surface occupied by the outcrop of the stratum.

He tried to pass over the word "alluvia," used by Professor Fream in his Paper, but could not do so. Alluvium was quite a modern word—there was no original for it in ancient authors—in fact, he believed he was correct in saying it was not a century old. He had not traced it back to its

original author; but he knew this about it, that it was a modern corruption of the well-known Latin word "alluvio," which had for its genitive, "alluvionis." Therefore it showed there was a nominative, at some time, of "alluvion," which also indicated material washed up on the shore by the sea, or on banks by a river, and forming land. But there was such a thing as ownership of land. Therefore, the form occurring in Dr. Johnson's Dictionary, 1755, viz., "alluvion" came down to us as a legal term, preserved simply in connection with the ownership of soil washed up by the sea or rivers. The form of plural could never be "alluvia."

As to the reason why the Geological Survey did not, at first, publish such a surface map, it may have happened that as Sir Henry de la Beche was mapping on his own account, he wanted to get more work done, and Cornwall was, he believed, a county free from drift. He (Mr. Lucas) joined the Survey in 1866, and at that time drift maps had only just become a serious matter, and he had himself been engaged on some of the maps exhibited. The author pointed out that, in 1 inch sheet, 96, S.W., the solid map showed the limestone, and the drift map the drifts; but they were all mapped together. The Magnesian limestone dipping east could be beautifully seen in profile. The fields free from drift were distinguished by a warm and beautiful red. The clay had a different appearance, and gave a sharp line of boundary.

Another map which he took part in making was at the other end of the room, and showed part of the oolites of Cleveland. He surveyed the whole of that oolite field between the watershed of the Vale of Pickering and Middlesbrough, and it represented four years' work.

With regard to moraines, Professor Fream placed them

first, then upper boulder clay, middle sands and gravel, and lower boulder clay. His (Mr. Lucas's) impression was that nearly all moraines in England belonged to the lower period.

The drift, did go south of the Thames. There were very few patches in the Thames Valley—in fact, he did not know that he could put his hand on one—but, according to Mr. Whitaker, there were a few such patches. South of the chalk, on the South Downs, there was drift which must be referred to the glacial age, running as far as Lancing or Shoreham, and then along the coast, he believed, as far as Portsmouth. That drift was full of foreigners—granites and syenites that did not occur in England, but are found *in situ* on the French side.

The author alluded to the services which geological maps had rendered to engineering. He could give an instance (he might give several, but he would give one) from his own experience of the uncertainty attending all generalisations about the character of the soil. In a single large field where some important works were to be carried on a triangle of borings had been made, and when he went to the spot, the foreman or clerk of the works was very much averse to having any further borings made; but, on going round the ground, he (Mr. Lucas) decided that two more should be made, and he chose as near the centre of the triangle for one of them as he could, the distance from the three holes put down being 500, 600, and 700 feet; but the boring he made differed *toto cœlo* from the other three, the reason being that at some time a great channel had been carved out, and refilled with sediment.

When Sir Christopher Wren examined the foundation for the new cathedral of St. Paul, he found that the old one had been built on a surface-bed of pot-earth, as it was called in the "Parentalia." Sir C. Wren, who was called "the

Surveyor," thought, as the pot-earth had carried such a heavy weight, it might be trusted again; but, to prove it, he sank a number of shafts down to the depth of the London clay, 40 feet. He built upon the pot-earth until he got within 6 or 7 feet of the north-east corner, when he found that the Romans had been there before him and taken away all the pot-earth, and he had no foundation for that portion of the cathedral. Then, rejecting advice to put down piles, he put down a shaft 40 feet into the London clay, and built up a pier of masonry, 10 feet square, to within a few feet of the surface, turning a short arch on to the old foundation, and that portion would stand for ever. As to other parts of the foundation, Dean Milman, in his description of the cathedral, said that the cutting of a sewer was stopped by the authorities in case it might loosen them. He mentioned these cases to show that, even with a map showing surface-beds, there was no guarantee that the same bed would continue throughout of the same character, even for a distance of a few yards.

He observed that Professor Fream referred to the contours of the underlying or deep face of beds. He had so contoured the upper surface of the chalk in the London basin from the hundreds of well-sections that existed. He might mention that the chalk sinks to a maximum depth of 600 feet below sea-level at Littleton, near Staines.

The author had also called attention to a pamphlet by Joshua Trimmer. He observed it was not a proposal for a public survey, but for a geological survey for private estates. However, he thought they might congratulate themselves that his symbols were not adopted, for he could not conceive anything more objectionable than letters representing matters of the description to which they were applied. Martin Lister was 150 years before him, for evidence of which he referred to a Paper ("Phil. Trans.,"

vols. xiii.-xiv., 1673-4) entitled "An ingenious Proposal for a new Sort of Maps of Countrys," &c., delivered to the Royal Society, March 12th, 1683, and one hundred years later Wm. Smith was found dealing with the same question.

He would only add, in conclusion, that the subject of soils in connection with agriculture did not form part of geology. It was a subject *per se*, which was initiated probably in a scientific way by Wallerius (J. G.), one of the Professors of Upsala, in a learned work on "the chemical principles of agriculture," originally published in Latin, and translated into German, with the title, "Chymische Grundzüge des Feldbaues," 1765.

Mr. J. G. Goodchild (Visitor) said so many questions of interest were raised by the Paper, that to discuss more than a few of them was impossible at that hour of the evening. There were, however, one or two points which had been passed over by the previous speakers to which he would briefly refer.

He was himself connected with the Geological Survey, and he found that only some 10 per cent. of the numerous visitors to the office came to make inquiries with reference to the nature of the soil. Most of the inquiries related to other subjects, such as water-supply, or the nature of the soils with reference to the foundations of houses. He supposed this might be taken as showing that, as a rule, agriculturists were not yet prepared to accept the teachings of geologists in regard to the nature of soils. As Mr. Lucas had stated, when the Geological Surveyors began first to map the superficial deposits, they mapped them without reference to the particular lithological characters they might present at the surface; thus, some of the Survey maps showing a blue tint, denoting

boulder clay, might, in many cases, include deposits of sand or of gravel; or, again, where sand was indicated, some beds of pebbles or gravel were perhaps included, and the nature of the resulting subsoil would vary in consequence.

Again, portions of the map indicated pebble as gravel, which was usually understood to mean a loose accumulation of materials forming a permeable soil; but in many cases that rock consisted of stiff and impermeable clay like the London Clay itself. A third map was, therefore, needed, to show the lithological character of the surface rocks irrespective of their age and of their geological formation, and Mr. Whitaker, who was always foremost in matters having a practical bearing, had begun to prepare a series of maps showing the lithological nature of the formations.

As to the date of commencement of the mapping of drift deposits, they had in the Geological Survey Office a series of old working maps referring to North Wales which were prepared 35 or 40 years ago; and from that time to this the mapping of the superficial deposits had gone on with more or less activity, though not so systematically as they could desire, because the officers of the Survey were not (until lately) in possession of the maps necessary for the regular progress which now characterised the work.

There were several other points he would have called attention to had time allowed, but he would conclude by remarking that Trimmer's method, which had been referred to in the Paper, was adopted in the field work and would be found recorded on the manuscript maps deposited in the Geological Survey Office.

Professor Fream, in reply, said the hour was so late that it was scarcely possible for him to deal with all the observations that had been made on his Paper.

So far as Mr. Squarey's remarks were concerned, with regard to the effect of denudation, especially in Chalk districts, it was a subject on which a whole Paper might be written, and though he had only been able to refer to it in a very cursory manner, he was by no means unmindful of its great interest. The notable case in American geology to which Mr. Squarey had referred was as remarkable as many other phenomena in that great continent, and he instanced some extraordinary examples of American soils which were mentioned in a Paper on "Canadian Agriculture" which he had communicated to the Journal of the Royal Agricultural Society last year.

The wide experience of Mr. Lucas entitled his observations to great respect, and he had brought to light again the name of Schüebler. It was a fact that many of the statements first made by Schüebler had really remained current to this day, though his name had dropped out of association with them.

He was not going to fall out with Mr. Lucas about the term "alluvia." He (Professor Fream) seemed to have committed, perhaps, a philological blunder in regarding alluvium as a Latin singular, but he had frequently seen "alluvia" used as a plural in standard works; still that was a matter for philologists rather than for geologists. Then Mr. Lucas objected to Trimmer's system, involving the use of italicised letters. He thought, however, that Mr. Lucas had tolerably well shown in the case of the three bore holes to which he referred, that Trimmer's system would have been admirably adapted to denote, by the use of letters, the character of the earth met with in going down vertically.

Hence, although Mr. Lucas objected to the use of the letters, yet he had given them an example in which they

would well have met the exigencies of the case. It was interesting to learn from Mr. Goodchild's remarks that Trimmer's signs were now being employed in the Geological Survey Office.

Respecting the inquiries at the office of the Geological Survey, he should like to take that opportunity of thanking the officials for the very great courtesy with which they received inquirers. He was sorry to hear from Mr. Goodchild that there was so small a percentage of inquiries bearing on agriculture, but he submitted that at present, as far as we could judge, the Geological Survey was not in so good a position to render information of an agricultural character as it would be in years to come. Then, no doubt, there would be a greater flow of agricultural inquiry in the direction of Jermyn Street.

He had referred to the work done by the old Board of Agriculture, and he was very pleased to be able to mention that all the agricultural maps of that Board, brought out under the direction of Arthur Young, were in the Library of the Institution, so that they were accessible for reference on the part of any Member who would like to make use of them.

He begged to thank the Meeting for the kind attention with which they had favoured him, though the subject was a very large one. He certainly had in his mind no idea of dissociating surface geology from solid geology, or of separating the study of solid geology from that of surface geology. The two branches were so interdependent that they could only be effectively studied as one.

Though he could not lay claim to having introduced into his Paper much that was new, he ventured to hope that many of his statements might be taken as suggestive. He should, indeed, feel himself amply rewarded should he have

been so fortunate as to induce Surveyors to turn to practical advantage the many and admirable opportunities which came in their way for studying the geology of the surface.

The President thought it should be known that they were indebted to the courtesy of the Director of the Geological Survey for the loan of some of the very interesting maps on the walls.

He claimed to be an old geologist, but many points that had been dealt with in Professor Fream's admirable Paper were comparatively new to him.

The vote of thanks having been put and carried unanimously, and briefly acknowledged by Professor Fream, the Meeting then adjourned.

Pape 139.
No. 236.

ON THE RECENT MUNICIPAL WORKS IN ROME.

By E. I'ANSON (President).

Read at the Ordinary General Meeting of The Surveyors' Institution, *Monday, May 17th,* 1886.

MR. F. VIGERS (VICE-PRESIDENT) IN THE CHAIR.

Of all the Cities of Europe—may I not say of the world?—there is none which excites more interest than the city of Rome, the Eternal City, and I have thought it might be of interest to you to hear something of the changes which are taking place in this interesting capital of the now united kingdom, which not so many years ago consisted of the kingdoms of Piedmont and of Naples, of the duchies of Florence and Modena, and of the Venetian States.

I shall not touch on that deeply-interesting portion of Rome, the old city, but what I have to say to-night relates to the remarkable change which has taken place since 1870, in planning, and to a certain extent forming, a great new city.

For the last three winters I have had the opportunity of seeing the extensive works which are in progress; it is these municipal works and their initiation which I now propose to describe, as, also, the laws regulating the same.

When the seat of the Government in 1870 was transported to Rome, the city was found insufficient to fulfil the requirements of its new destination.

The considerable increase of its fixed population and probable increase had to be provided for.

The necessity that the modern city should have well-planned and well-drained streets, the example of what Florence had already accomplished, which for five years was the seat of Government, immediately engaged attention, and, whilst it was felt desirable to initiate works of urgent necessity without delay, it was equally felt that some general plan should be settled to regulate the development of the city, with a view to which, within ten days after the formation of the provisional Government on the 30th September, 1870, a Commission was appointed, of which Signor Pietro Campanesi was President, the veteran archæologist Signor Rosa was Vice-President, and nine other members, architects or engineers, all Romans, and well acquainted with the topography, the local difficulties, and the many questions which had to be considered in designing a plan for the development of the city.

This Commission, although the Members were soon agreed on the general principles of a plan, did not so easily agree as to the details of the extensive and complete scheme they were appointed to carry out. And in describing what actually took place I cannot do better than take as my guide their Report entitled "Relazione della Commissione examenatrice nominata dal Consiglio Comunale nella Seduta del 12 Decembre, 1881," and which refers to a plan called the "Piano Regolatore e di ampliamento della Citta di Roma."

This Report was a private Report, I presume, to the Members of the Commission. At all events, it is not in public circulation, and I obtained it through the kind offices of an English artist long resident in Rome.

This, I presume, was the final Report, for you will hear in the course of this relation that there were many other Commissions who considered and reported on this subject.

I exhibit here and deposit a plan, dated November 1885, being a reproduction "del piano regolatore di ampliamento

della Citta di Roma," before referred to, with additions and variations.

The Report commences with a short history of the formation of the first important streets which opened up the Dedalus of Mediæval Rome—the Corso, Via del Babuino and Ripetta, la Giulia, Paulina, Alesandrina, Bonella, of Ara Coeli, and Gregoriana, which were formed during the Pontificates of the COLONNA, CORDULMIERE, BARBO, DELLA ROVERE, BORGIA, MEDICI, and BONCOMPAGNI; its further development under the vigorous direction of Pope SIXTUS V., by the formation of the Via Felice, Sistina, Quattro Fontane, of Porta Pia, part of the Via di Santa Maria Maggiore, of Porta S. Lorenzo, la Merulana, of San Giovanni, and the Piazzas of the Lateran and Esquilene; during his time also the Felice Aqueduct was formed, and much done for the embellishment of the city. It then refers to further municipal works done during the time of the Napoleonic regime, between 1809 and 1814; and, lastly, refers to the Commission appointed by the Government, in 1870, to consider a plan for the improvement of Rome.

It then contains an interesting account of the manner in which the "piano regolatore" was prepared, of the orders given by the Commission who examined the "piano regolatore," a critical examination and description of the plan with schedules or tables annexed showing the principal important works carried out between 1870 and 1881, and the cost thereof, and the area in square metres appropriated to buildings of public utility. The same for streets and squares and Boulevards Via Alberti in the new residential and industrial quarters of the town, the length of the streets to be formed or enlarged, the superficial area of the public gardens, and other details.

When the Commission commenced its labour the Mem-

bers had before them plans which had already been prepared—namely, "a piano regolatore de MASSIMA"; a second plan, proceeding from a section of the appointed Commission; a third plan, presented by the Roman Communes, prepared by the engineer MEROTTE; and a fourth plan by an architect named PANICONI.

A Council of the Roman Commune was called on to deliberate on these plans on the 3rd June, 1871, and appointed four engineers to examine and report on the merits of the plans produced, who reported in favour of the plan of the Government Commission, but suggested various alterations, whereupon an amended "piano regolatore" was prepared.

At this stage of the inquiry another engineer, ALESSANDRO VIVIANI, was called in, when, after the lapse of several months, the "piano di MASSIMA" was recommended for adoption, and provisionally approved by the Council on the 28th November, 1871, when, pursuant to a law passed in 1865, the plan was publicly exhibited, so that it might be fully known and criticised; and on 15 consecutive days this plan was examined by a daily average of 120 persons, in all about 1,800. The objections made were neither serious nor numerous, but all objections made, either by individuals or by the public press, were carefully recorded, so that any amelioration to the plan which might appear necessary as the result of the objections offered could be made.

This plan seems to have been divided into sections, for on the 14th September, 1871, the Council approved of the plan for the Esquiline Quarter.

The Commune, on the 13th of November, approved of the plan for alterations in the Piazza Sa. Maria Maggiore and adjacent streets; on the 20th February, 1872, of the plans of the Pretorian Camp and of the Viminale

Quarter; on the 20th March, of the Industrial Quarter of Testacceo; and on the 6th April, of the Quarter of the Celio.

For the Esquiline Quarter and the Pretorian Camp the proposed works were decreed to be works of public utility.

In the Viminale and Celio Quarters agreements were entered into with the proprietors of the required property, with a view to settle the line of streets and to provide land for the erection of manufactories, some of which were already in course of construction.

In the Testacceo District it was stipulated that there should be a concession, but, as the Commissioners did not succeed in forming a society willing to take up this portion of the scheme, it was left in abeyance; but at the present time considerable works are there now in progress.

Finally, in the sitting of the 19th August, 1872, the project was approved of continuing the Via Nationale direct to the Fountain of Trevi and to the Piazza Sciarra, and for which the necessary powers of expropriation were obtained.

The Commission had proceeded thus far in the summer of 1873, by which time the Massima plan, which was then partially approved, contained all the fundamental requirements of a first design, and it was again presented for the sanction of the Council, who, before having a definitive consultation, on the 9th July, 1873, appointed a third Commission composed of four engineers, with instructions to re-examine the plan and also ten other plans which by that time private engineers had laid before the Municipal Administration.

Two months afterwards this Commission published their Report, dated 3rd September, 1873, which determined that

neither of the ten new plans were better than the official "piano regolatore" or capable of being combined with it.

The Commission classed the proposed works under three categories:—

1st. Those they thought indispensable.

2nd. Those they thought relatively useful.

3rd. Those they considered ornamental and not absolutely necessary.

On this Report further discussion took place, the opinion of the public was invited, and several meetings took place to consider the objections and criticisms on the plans which were read to the Council on the 6th October, 1873, Franesco Nobili Villetashi, President; and on the 18th of the same month the "piano regolatore" appears to have been accepted, and a further Commission was then named, who published a Report in April 1882, and this seems to have been the final Report. It was signed by Villetashi, President; Marco Ottoboni Duca de Tiano, Giovan. Ballista de Rosa (the veteran archæologist), Salvatore Bianchi, Emidio Renazzi, Andrea Brachi, Geatano Pompiano, and Antonio del Vecchio, Secretary.

The "piano regolatore," after passing through the various Commissions which had succeeded each other, received the approval of the Parliament, when a law was passed to enable the State to contribute to the rebuilding and extension of what had become the capital town of the country.

So early as 1873 it had become apparent that without the assistance of Government the city had not the power to meet the exigencies of the new position, and that it was not reasonable that the Commune of Rome should without assistance be required to provide for the expense of the proposed works, which were for the advantage of the whole nation.

Nevertheless it was even then decided to continue the

works in the new Esquiline Quarter with the Via Nationale, delaying other works for the present, and until Government assistance could be procured.

The Committee found, by reference to the statistics of the decennial period anterior to 1871, that the annual increment of the population had been 3,000; from 1871 to 1881 the increment had been 80,000, perhaps one half of which was occasioned by transporting the seat of Government to Rome. In 1879 the increase was 7,100; in 1880, 9,000; in 1881, 6,500; and it was considered that, during the next 25 years, the annual augmentation might be reckoned at 5,000, or in all 125,000, which, added to the 300,000, the population at the time of the last census, would amount to a population of 425,000. Then, taking it as a basis that a well-arranged city contains 500 inhabitants to the square acre, including buildings and streets, the extension of the plan should be such as to provide for 850 square acres; and, as the inhabited part of the city in 1871 covered an area of 500 acres, it followed that the additional area required in the new quarter was 350 acres.

Additional spaces, conveniently placed, were also considered necessary for docks, markets, slaughter-houses, and above all for studios, workshops, and other buildings in connection with the fine arts—one of the staple industries of Rome.

The principal streets it was determined should be 25 metres wide, and that the others should vary from 20 to 12 metres.

It was more difficult to decide about the enlargement of the old streets, on account of the difficulty of removing various old buildings of archæological interest and artistic value which it was desirable to preserve.

It was considered that the bridges should not be more than 300 to 400 metres apart, and that they should coincide with important streets already formed or contemplated, and

the retention of gardens and public promenades, the Committee considered, should not be neglected.

After making these general observations the Commission refers in considerable detail to various parts of the plan.

Quarter of the Pretorial Camp and Barracks for a Regiment of Artillery.—The plan for this quarter was approved 27th February, 1872, and a concession of the land was originally made to the Societa di Credito Immobilieri et di Construzioni in Italia, but finally to the Banca Tiberina.

Esquiline Quarter and Terreno del Policcinico.—This was approved 14th September, 1871, and concession of a portion of the ground was originally made to the united Society of the Commercial Company of Italy and Genoa and of the Banca itatiana di Construzioni of Genoa, and ultimately transferred to a Society impreso del Esquilino; and this quarter, extending from the Via Viminale and S. Eusebio, from the station to the Piazza Santa Maria Maggiore and the Via Carlo Alberto, is already built and inhabited.

The Report then mentions that the portion of this district lying between Santo Eusebio and the new Viale Manzoni, and between the station and the Via Merulana to the Church of St. Pietro e Marcellino, was immediately taken possession of by the Commune, who constructed the necessary sewers and roads, and the land was disposed of to private individuals.

The works of the *Quarter al Celio* were approved by the Council on the 6th April, 1872. It contains 10 acres, and will provide for 5,000 inhabitants. In the development of this quarter the Commune was assisted by the proprietors having gratuitously ceded several streets; but slow progress has, however, been made in its development.

Quarter all' opio.—This quarter, which at the date of

the Report was without buildings, and almost without roads, and much occupied by the extensive ruins of the baths of Titus and Trajan, the Commission considered would be difficult to deal with satisfactorily.

It was on this hill that it was proposed to place the Military Hospital, but this has been changed by the Minister of War.

Excluding the ruins, there will be 10 acres available for buildings capable of containing 5,000 inhabitants.

Quarter on the slopes of the Viminal and Quirinal Hills.—A considerable part of this district belonged to Monsignor Saverio de Merode, and was acquired by the Commune in 1871. The Report sets forth the steps taken to acquire other portions and remarks on the streets to be formed or altered. When developed it will give an area of 25 acres of building land, capable of accommodating 13,000 inhabitants.

Quarter of Monte Testacceo.—This quarter the Commission consider specially suitable for a manufacturing and mercantile district, on account of the close proximity to the proposed railway at Trastevere, and of the river.

Quarter of the Prati di Castello, lying northward of the Castle of St. Angelo, outside the walls of Rome, and consisting of vineyards, it was proposed to add to the city, affording sites for barracks, a large exercising ground, and Courts of Justice.

Quarter of Borgo Flaminio.—Just outside the Porto del Popolo, where the English Church is situate, it was determined to lay out a district containing 68 acres of land and capable of receiving a population of 9,000 inhabitants. This is a district already occupied by ateliers of sculpture and other industrial establishments; and the Commission deems it desirable to extend the city in that direction.

Quarter of the Ghetto.—The Jews' quarter, where the

picturesque remains of the Temple of Marcellus are familiar to all who have visited Rome.

This is the quarter in which the Jews lived, who until a comparatively late time were absolutely confined to this district. It is the lowest and dampest part of the city, and 4,000 inhabitants now occupy a space barely sufficient to accommodate 1,000, and old badly-constructed houses crowded round what the Commission describe as Luridi Vicoli; and they propound their schemes for the improvement of this quarter.

Also for the *Aventine Quarter*, which is in the southern part of the town, just beyond the Circus Maximus, and near to the Roman Gasworks.

They describe the proposed continuation of the Via Nationale to the Ponte St. Angelo, which would pass through the very centre of the old part of Rome, which would be a most costly work; the continuation of the Via di Ripetta, the westernmost of the three streets diverging from the Piazza del Popolo; the continuation of the Corso to the Campidoglio and the Roman Forum; continuation of the Via Babuino and Due Macelli, the westernmost of the three streets leading out of Piazza del Popolo.

Improvements in the Corso.—New street from the Fountain of Trevi to the Pantheon; lengthening of the Via Tritone; new street in the Testacceo district; lengthening of the Longara, a principal street of Trastevere running near to the river; enlargement of Longarella, also in Trastevere; Via dei Serpente, leading out of the Via Nationale; then, after referring to various minor streets, they advert to the proposed demolition of the houses between Borgo Vecchio and Borgo Nuovo, in Trastevere, which would greatly improve the approach to St. Peter's.

Improvements proposed in the Via Ara Cœli, near the Capitol.—Proposed new bridges over the Tiber, of which

they propose the liberal number of six; works at Lungotevere, in Trastevere; proposed new gardens; an external boulevard; a railway station in Trastevere and other works; and they conclude by a critical examination of different schemes which they had under consideration for the then proposed development of the city, all which is given in great detail and would occupy too much time on such an occasion as this to go into at all fully; so I can only refer to the Report itself those who may seek further information on the subject.

What may be gathered from this relation is, that vigorous efforts were made as soon as Rome became the seat of Government in 1870 to devise a plan for forming new streets and altering old ones, so as to effectually provide for the anticipated increase of population and the public buildings necessary for State and municipal purposes.

The relation states that in 1865—a law had been passed to enable the compulsory acquisition of land and houses for purposes of public utility.

It sets forth the various steps which were taken, the apparently thorough and conscientious study and publicity which was given to the subject, and concludes with recommendations as to the order of time in which the various works contemplated should be carried out.

The conception of the plan appears to me truly magnificent and of great public utility, because it is a "piano regolatore"—that is, a plan which, after the largest opportunity for inquiry has been given, is the plan adopted by the governing body, the strict adhesion to which will ensure the development of a great and well-arranged city.

As I understand it, the Government takes the initiative, and requires the Commune to execute such works as the Government thinks necessary, leaving, however, as I gather from the relation, great latitude to the Commune as to the

details; that thereupon the Commune studies the subject, and prepares its scheme and plan; and the approval of this plan is considered equivalent to a declaration of public utility on which may follow the expropriation or acquisition of such property as may be required for carrying on the work.

It also appears that after the plan for the intended improvements, or probably after the order of the Government is given to take the matter into consideration, that a period of twenty-five years is allowed for the execution of the work, and the Commune has power to levy taxes so as to provide for the expenses of carrying them out.

The development of the new city commenced in close proximity to the terminus of the railway, which, after skirting the east side of the city, enters it on the north-east, near the Porta Maggiore.

Close to the railway station are the ruins of the Baths of Diocletian. Opposite these ruins a fine crescent has been formed, and from the centre of this crescent the important Via Nationale has now been constructed, running in a south-westerly direction for nearly 1,000 yards towards the Piazza Venezia, which is at the southern end of the Corso, the great street of old Rome. This is a noble street; it falls pretty gradually towards the Piazza Venezia until at the lower end, where the street has an inconveniently steep gradient, and an awkward bend. At the present time the work of the demolition of the buildings which it is necessary to remove in order to extend the Via Nationale towards the Castle of St. Angelo is actively going on.

From the Baths of Diocletian to the Piazza Venezia the Via Nationale is now completely formed, lined on both sides with either new buildings (entirely so in the upper part) or with old buildings in the lower part of the street, the façades or enclosures to which have been altered so as

to adapt them to the line of the new street. Some gardens also abut on the street, causing open spaces to be left; but the aspect of the street is on the whole highly satisfactory, and in parts even picturesque.

In the upper part is one of the large modern hotels of Rome, the "Quirinale," not far off from which, in a parallel street, is another modern hotel, the "Costanze." On the upper part of the Via Nationale stands a charmingly-designed church, built for the Americans—who frequent Rome in large numbers—by the late Mr. STREET, in the mediæval style, with such modifications as the locality and the climate suggested to the mind of that most able architect. In the lower part of the street is a somewhat imposing building called the Palazzo degli belle Arti; the other buildings are private houses or shops. The street is of ample width, and planted as a boulevard, with trees on either side.

Extending from the Piazza Monte Cavallo, which is near the palace on the Quirinal Hill, formerly the residence of the Popes during the hot months of summer, but now the Royal residence, commences the Via Quirinale, which prolonged north-eastward is called the Via Venti Settembre; and between this street and the Via Nationale most of the old buildings which existed have been removed and replaced by new buildings on a large scale.

To the north-east of the Baths of Diocletian, up to the Pretorian Camp, the whole quarter is new, and contains several public buildings.

This portion, the Viminale, now almost entirely covered with houses, extends in a south-easterly direction beyond the railway station and towards the Porta Santo Lorenzo; but near the Porta Santo Lorenzo a considerable area yet uncovered is retained for public buildings.

About the middle of the first portion of the Via

Nationale, and at nearly a right angle to it, runs the Via Quatro Fontani, passing the Piazza Esquilino, and continuing up to the Piazza Santa Maria Maggiore. Between this street and the railway the whole space is now covered with new buildings.

Towards the fine Basilica of Santa Maria Maggiore the ground falls, and it has been necessary to form steps round the church, to make it accessible from the altered level of the street.

This has been done in the most complete manner, and the noble range of stone steps which now surrounds the Basilica adds further dignity to this already grand edifice.

In continuation of the Via Quatro Fontani, and beyond the Basilica Santa Maria Maggiore, run the Streets Via Carlo Alberto, Via Conte Verde, Via Santa Croce, in the direction of the Porta Maggiore, a considerable portion towards the south-east being retained for public buildings; but in the other parts streets are finished and buildings are completed up to and a little beyond the noble Piazza Vittorio Emmanuelo, where the houses are so constructed as to have a covered arcade all round the piazza.

Southward of this the streets are laid out, although buildings are not yet erected; but the buildings already erected and streets laid out absorb the major part of the Viminal and Quirinal Hills of Rome. This is the most important part of modern Rome.

On the Trastevere side of the river a large district has been planned to the north and east of the Castle St. Angelo; the roads are to some extent formed, and some fine new buildings erected.

Not the least interesting work now in course of execution is the embankment of the Tiber, which is being carried on on the Trastevere side; in the prosecution of which

scheme the embankment has been or will be advanced, and in one part the land at the back of the Palazza Farnesina, which projected into the stream and narrowed it very inconveniently, has been removed.

This work appears to be going on with considerable rapidity, and when completed will be a most important improvement.

Amongst other schedules appended to the Report I give the following:—

WORKS EXECUTED BETWEEN 1870 AND 1881, AND THE COST.

	Lire.	Lire.
Expenses connected with the survey and designs of the plan of the proposed alterations - - -		500,000
New Quarter of the Esquiline—		
First zone, forming streets -	2,200,000	
Expropriation in the 2nd and 3rd zone - - - - - -	3,500,000	
Cost of streets, 2nd and 3rd zone	4,500,000	
		10,300,000
Quarter of the Pretorian Camp—		
Expropriation - - - - -	60,000	
Cost of streets - - -	120,000	
		180,000
Viminal Quarter from the Via Nationale—		
Cost of streets - - -		60,000
Formation of granaries and hay stores - - -		20,000
Works in Via Luciano, Manara, and Mattonato - - -		216,000

	Lire.	Lire.
Modification of the Piazza de Santa Maria Maggiore, Via Urbana, and Quatro Fontane—		
Expropriation - - -	250,000	
Works - - - -	820,000	
		1,070,000
Via Nationale, up to the Via Consulta - - - -	990,000	
From Via Consulta to the Piazza Venezia—		
Expropriation and works -	7,000,000	
		7,990,000
Works on the line of Via Baccina—		
Indemnities and works - -		160,000
Continuation of the Via del Fratte and Mattonato to the foot of the Janiculum—		
Expropriation and works -		150,000
Enlargement of Via del Rotondo and improvements in the Via del Crescenti - - -		97,200
Contribution to the enlarging and improving of the first section of the provincial Via Tiburtina, new Cavalcavia of Santa Bibiana to the new Porta Tiburtina -		170,000
Enlargement of Ponte Sisto - -		180,000
Formation of lateral openings to the Porta Flamina - - -		335,000
Improvements in the Street and Piazzali a Termine - - -		180,000

	Lire.	Lire.
Expropriation for partial enlargements and improvements in the following named streets :—		
Pie di Marmo, della Gatta, Corrallo, Venti Settembre, S. Vitale, Convertete, and others - - - - -		2,000,000
Sewers in the Via Babuino and Ripetta - - - - - -		190,000
Sewers for the passage of the water from the Colosseum, deducting the amount of the Government Contribution - - - -		220,000
Sewers on the south side of the Colosseum to the end of the Via Labicana - - - - -		150,000
Other work to the Great Sewers -		250,000
Deviation of the Felice Aqueduct of the Castro Pretorio, and works connected therewith - - -		540,000
Works in connection with the distribution of the Aqua Vergine -		868,000
Purchase of Aqua Marcia water, for the purpose of flushing and cleansing the sewers - -	750,000	
Construction of a reservoir of the capacity of 1,000 cubic metres -	150,000	
Works in connection therewith -	200,000	
	———	1,100,000

	Lire.	Lire.
Alteration of convents for schools and other municipal uses - -		900,000
Purchase of Palazzo Aldobrandini, in the Via Palombella - -	575,000	
Alteration of the palace into a school	122,500	
New schools on the Esquiline Hill -	415,000	
Upper normal and technical schools for women - - - - -	90,000	
		1,202,500
Palace for the exhibiting fine art work, estimated to cost £1,400,000 —already spent - - -		560,000
Cemetery at Verano, expropriation -	150,000	
works - -	900,000	
		1,050,000
Campo Boario, Works at - -		250,000
New fish market - - - - -		130,600
Public dormitories - - -		50,000
Stabling and coach-houses for hearses		21,700
Expenses of lighting the city for the last eleven years - - -	6,890,000	
Deduct amount of expenses before 1871 - - - - - -	4,037,000	
Balance - - -		2,853,000

or a total of nearly 37 million lire.

This does not include expenses on the banks of the Tiber which are done in conjunction with the Commune.

SUPERFICIAL AREA OF THE NEW QUARTERS ALREADY FORMED OR TO BE FORMED FOR THE PURPOSE OF PROVIDING BUILDING SITES, COMPRISING THE AREA OF THE STREETS.

	Ettare.
Quarter Castro Pretorio	40
Esquiline Quarter	66
Celio Quarter	10
Oppio Quarter	10
Quarter between the Via Quatro Fontani and the Baths of Diocletian	25
Quarter on the slope of the Gianicolo, deducting the few existing buildings	20
Industrial Quarter of Monte Testacceo, the part destined for buildings	12
Quarter of the Prati di Castello, omitting the areas for the Infantry Barracks and Palais de Justice and parts of the Forts S. Angelo	87
Quarter of Borgo Flaminio	18
Aventino Quarter	22
Further space provided principally in the old part of the town	40
Total	350

Of which in actual construction	140
Projected	210
	350

SUPERFICIES OF THE STREETS AND PIAZZAS OF THE NEW QUARTER DESTINED FOR INDUSTRIAL AND RESIDENTIAL PURPOSES.

	Square Metres.
Superficies of Street and Piazza at Castel Pretorio	160,000
„ Esquiline Quarter	260,000
Carried forward	420,000

	Square Metres.
Brought forward - - -	420,000
Superficies of Celio Quarter - - - -	40,000
„ Oppio Quarter - - - -	45,000
„ on the slopes of the Viminal and Quirinal - - - -	100,000
„ on the slopes of the Gianicolo -	75,000
„ on the Monte Testacceo parts intended to be inhabited - -	50,000
„ Prati di Castello - - -	400,000
„ Borgo Flaminio - - - -	70,000
„ Aventino Quarter - - -	80,000
„ in other quarters - - -	100,000
	1,380,000
This figure corresponds to nearly 40 per cent. of the total superficies of the new inhabited quarters, and to this should be added for the streets in the new Industrial Quarter of Monte Testacceo - - - - -	120,000
Total - - - -	1,500,000
of which about 560,000 square metres is already constructed, and 940,000 square metres remains to be constructed.	
In the old part of the city the streets occupy about 30 per cent. of the superficial area of the inhabited portion - - - - - -	1,500,000
Which results in a total area of streets and squares, or piazzas - - - - -	3,000,000

This gives an average of about 36 per cent. for the total 850 acres of the whole city; and, if allowance be made for

the further opening of new streets, the enlargement of others in the old part of the city, and the enlargement of some of the existing piazzas, it results in a proportion of 38 per cent. for the area of streets, which is a satisfactory proportion in a well-arranged city.

LENGTH OF NEW STREETS TO BE OPENED AND ENLARGED IN THE OLD PART OF THE CITY.

Streets 20 *metres wide.*

	Metres.
Continuation of Via Nationale and of Via del Plebiscite to the Ponte St. Angelo - - - -	1,500
Via Cavour, from Piazza de Venezia to the Piazza Esquilino, continued to the Basilica of St. Maria Maggiore - - - - - - - -	1,600
Via del Statuto, from the Via Cavour to Via Merulana - - - - - - - - -	540
Via dei Mercati da Campatelli to the Bocca della Verita - - - - - - - -	480
Via degli Archi and della Pulota - - - -	160
	4,280

Streets 16 *metres wide.*

Continuation of Via di Ripetta and Scrofa from St. Luigi dei Francisco to the Piazza St. Francisco a Ripa - - - - - - - - -	1,400
Continuation of Via Babuino and due Macelli from Via Tritone to Via Nationale, and extension from Via Milano to Panisperna - - - -	800
Street from Piazza di Fontana di Trevi to the Piazza del Pantheon 15m. - - - - - -	850
Via from Pantheon Piazza by Via Randanisi, and Via St. Luigi dei Francesce to the Circus Agonale	320
Carried forward - - -	3,370

	Metres.
Brought forward - - -	3,370
Lengthening of the Via del Tritone to the Corso, part 12m., part 15m. - - - - - - -	320
Street from Via degli Astalli to Piazza Campitelli and to the Theatre of Marcellus - - -	350
Continuation of the Via del Lungara to the Piazza St. Maria in Trastevere - - - - -	360
Extension of Street from Borgo St. Spirito to Via	300
Bastioni - - - - - - - - -	270
Street from Piazza Agonale to the Bridge del Orso -	243
Street from Via Banchi Vecchi to the Bridge St. Giovani del Fiorentini - - - - - -	140
Street from the Via Larga to the bridge in the middle of the Longara - - - - - -	179
Street from St. Andrea della Valle by the Streets of Chiavari and Pettinazi to Ponte Sisto- - -	480
Street from Via St. Theodoro to Ponte Rotto - -	280
Street del Lucchesi to the Piazza del Trevi - -	140
	6,432

Streets 12 *metres wide.*

Via Longarella and Longarina - - - -	640
From Ponte Cestio to Porta Portese - - -	680
Street from Ponte Sisto to the Piazza St. Maria in Trastevere - - - - - - - -	200
Extending Via del Mattonato to the Via del Riari -	580
Extending Via Lavatore until it joins Via due Marcelli	250
Extension of Via del Clementino from the Piazza Nicosia to the Piazetta del Orso - - -	240
Continuation of Via de Panico to the Piazza Agonale	350
The enlarged streets Affizi, Stellata, and Orso -	630
	3,570

Streets 10 *metres wide.*

	Metres.
Continuation of Via del Cestari by St. Nicholas a Cesarini Piazza Paganica and Via del Reginella to the Ghetto - - - - - - - - -	230
Street from the Piazza Campitelli to the Portico of Octavia - - - - - - - - - -	
Street from the Corso traversing Palazzetto Theodoli by the Via della Vignaccia and del Impressa Vecchia to the Via dei Prefetti - - - - -	160
Via della Chiesa Nova al Lungotevere, in the direction of the Vicolo dei Matriciani - -	290
Street from the Theatre of Marcellus by the Via della Pescheria, del Planto, del Giubbonari, del Cappillare, until it meets the extension of Via Larga	830
	1,510
Lungotevere, on the right side of the Tiber, from Piazza Pia to the Scali of Ripa Grande - -	2,500
On the left bank, from the Passegiata di Ripetta to the Bocca della Verita - - - - - -	3,300
	5,800

For the most part, these streets are 20 m. wide.

	Kiloms.
Streets bordered with trees, boulevards surrounding the city - - - - - - - - -	30
Streets round the Plazza d' Armi - - - - -	8
Ditto on the Lungotevere, from Passegiata di Ripetta to the Prati di Castello - - - - - -	2
Kiloms.	40

SUPERFICIAL AREA OF PUBLIC GARDENS.

	Square Metres.
Gardens of the Pincio	75,000
Gardens of the Piazzali di Termini	15,000
Garden at the Baths of Titus	130,000
Botanical Gardens	45,000
Garden of St. Pietro in Montorio, comprising gardens to be formed along the proposed street to the Gianicolo	35,000
Garden round the Mole Adriana	50,000
	350,000
Gardens outside Villa Inghirami, Villa Glori, and fields of the Acqua Acetosa	1,800,000
	2,150,000

AREA WHICH IS TO BE APPROPRIATED FOR BUILDINGS, WHICH ARE OBLIGATORILY TO BE CONSTRUCTED WITH THE ASSISTANCE OF THE GOVERNMENT.

	Square Metres.
Area for Barracks for a Cavalry Regiment placed at the extremity of the Castro Pretorio	90,000
Area for the Policlinico at the extremity of the Esquiline Quarter, eastward of Via Manzoni	130,000
Area for a Military Hospital, 600 beds, situation not determined	60,000
Area for the Fine Arts Exhibition Building	15,000
Area for a Palace of Science	15,000
Area for a Market, situate near Bocca della Verita and Monte Testacceo	30,000
Carried forward	340,000

	Square Metres.
Brought forward - - -	340,000
Area for a Palace of Justice, to be situate near the Castle of S. Angelo - - - - -	20,000
Area for two Barracks for Infantry, capable of holding a Regiment, each situate near the Castle of S. Angelo - - - - - -	40,000
Area for Supplementary Military Barracks, for 400 beds, outside the Prati de Castello - -	40,000
Plazza d'Armi, Exercising Ground in the Prati di Castello - - - - - - - -	1,000,000
	1,440,000

And after these Tables follow some concluding remarks, and the Commission then recommends the following works to be done as promptly as possible:—

1. Continuation of Via Nationale to Porte St. Angelo.
2. Enlargement of Via del Chiaviri and del Pettenari to give better access to Ponte Sisto, and the rearrangment and improvement of the two streets which lead from Ponte Sisto to the Piazza St. M. in Trastevere and to the Via Garibaldi.
3. Enlargement of the Via della Cuccaga, and new street from the Piazza Agonale to the Piazzetta del Orso.
4. Continuation of Via di Ripetta and della Scrofa.
5. New bridge, al Orso.
6. New bridge, alla Regola.
7. Street from Ponte alla Regola to St. Francisco a Ripa, passing by the Via de St. Crisogono.
8. New street from Piazza di Fontana di Trevi to the Pantheon.
9. Street from Via degli Astalli to Via Montanara.
10. Enlargement of Via Tomacelli.

11. Continuation of the Corso to the Roman Forum.
12. Via Cavour from S. M. Maggiore to Roman Forum.
13. Viaduct to traverse the Roman Forum from Via Cavour to Via S. Theodoro.
14. Street from Statuto de S. Lucia in Selci to the Via Merulana.
15. Partial demolition of the Ghetto.
16. Acquisition of land for an exterior Boulevard.
17. Markets and their connection with the railway.
18. Prolongation of the Via dei Serpente to the Colosseum.
19. Enlargement of Via S. Lorenzo from the quarter of Castel Pretorio to the new Porto de St. Lorenzo.

20. } The construction of sewers in the new quarters.
21. }

22. The construction of such Government buildings as are necessary.

Second-class Works which may be deferred.

1. Completion of the removal of the Ghetto.
2. Two suburban bridges.
3. Removal of the slaughter-houses from Campo Boario to Monte Testacceo.
4. Bridge at Porto Portese.
5. Continuation of Via Largo to the Tiber.
6. Bridge about the middle of the Longara.
7. Continuation of works on the Via Lungara.
8. Enlargement of the Via Longaretta.
9. Prolongation of the Via Babuino and due Marcelli, passing under the gardens of the Quirinal to the Via Nationale.
10. Enlargement of the Corso, from the Via delle Convertite to the Vicolo Cacciabove.
11. Continuing Via del Tritone.
12. Completion of the Piazzas de Fontana di Trevi and of the Pantheon.

13. Bridge behind the Piazza del Popolo.
14. Certain Viali.
15, 16, 17. Works of sewage on both sides of the Tiber.

The conditions under which the expropriation of property is carried out are regulated by Royal Ordinances, the latter of which was, on the 24th June, 1865, entitled "Legge sulle espropriazione per causa di Utilità Publica."

It consists of 101 articles, or clauses, under 3 chapters and 15 divisions, which are as follows:—

Chapter (Titolo) I.

1. The proceedings required to be taken to entitle any proposed works to be considered works of public utility.
2. Of the manner of declaring proposed works to be works of public utility.
3. Of the manner in which property desired to be expropriated shall be described.
4. Of the indemnity to be paid, and the manner of determining it.
5. As to decrees to be made in reference to expropriation, and on the payment of the indemnity.
6. On depositing the indemnity due to minors and other incapacitated persons, or corporations.
7. Of the right of owners whose property has been expropriated to repurchase such part of their property as has not been required in carrying out the work of public utility for which the property was taken.

Chapter (Titolo) II.

1. On the temporary occupation of land for procuring stone, lime, or other materials necessary to carry out public works.
2. On occupation under conditions of forza maggiore, or of urgency.

3. On expropriation for the construction of military works.

4. On expropriation in the case where contribution is required.

5. On the expropriation of historical monuments and national antiquities.

6. On projects for street and sanitary improvements.

7. On plans for enlarging communes.

Chapter (Titolo) III.

Final and Transitional Arrangements.

The first chapter, first division, sets forth what property may be taken for works of public utility, and declares that not only the State, the Communes, public bodies, but even private individuals, may initiate such proceedings.

That every demand for expropriation made on the plea of public utility must be accompanied by plans and certain documents.

That such demand shall be made public, that the plans and documents shall remain for fifteen days in the office of the Commune or Communes affected.

The plan deposited to be open to inspection and objection.

Engineers, architects, and valuers are empowered to enter properties to survey on three days' previous notice having been given, the mayor reserving to himself the right to nominate some independent person to accompany the experts: provision is also made for fines on persons resisting the survey.

The second division explains the manner in which proposed works shall be declared works of public utility.

The third division describes what further details and particulars are to be given where a projected work is

declared to be a work of public utility, and the manner in which public notice is to be given of the proposed work, and how objections made to the deposited plans are to be dealt with, the power of deciding being in the hands of the Prefect.

This division also sets forth that the promoters of any proposed work are at liberty to acquire not only what may be actually necessary, but such contiguous property as may materially facilitate the execution of the intended work.

The fourth division deals with the compensation to be paid, and the mode of doing so.

It states that the promoters shall declare what compensation they offer; if it is accepted, it must be in writing, and sent to the Mayor of the place where the property is situate, by whom it is transmitted, with the sum agreed to be paid to the Prefect, who deposits the compensation in the Public Bank, until the Council of the Prefecture orders the payment in whole or in part to the party whose property is taken, according to his interest therein; and on payment being made, the Prefect authorises the promoters to take possession of the expropriated property.

When the sum offered is not accepted, the Prefect is directed to inform the President of the Tribunal of the District, who is within three days to nominate one or three valuers to value the property, with directions as to the time within which their valuation is to be made.

The valuers are to give three days' notice of the day on which their survey will be made. If the valuation is below the sum offered, the expenses of the survey are to be borne by the owner of the expropriated property; but if otherwise then by the promoters, or the expenses are to be divided where there is a difference of only 10 per cent. between the price offered and the valuation.

The fifth division sets forth that the decision of the

valuers is to be transmitted with all documents to the Prefect, who is to order it to be deposited in the "cassa dei depositi." A decree of the Prefect is to be thereupon made, and is to be transmitted at the charge of the promoters to the owner of the expropriated property, who within 30 days may make his objection to the judicial authority, either as to amount determined as above, or as to the valuers' charges, and the objections so made are to be intimated to the Prefect and to the promoters. All further proceedings appear to be relegated to the legal tribunals.

The sixth clause deals with owners who are legally incapacitated.

The seventh clause, with the right of owners to obtain the retrocession of land which may not have been actually required for works of public utility.

In the second chapter the first clause provides that, when, for the purposes of works of public utility, the acquisition of stone, lime, or other material is necessary for the construction of the intended works, power is given to the promoters to take temporary possession of land where these materials may be obtained; in which case notice is to be given to the Prefect of the province, with an intimation as to the time the occupation will be required, and the sum offered as indemnity. Notice is also to be given to the proprietor, who is within ten days to say whether he accepts, and if no answer is made it is to be concluded that he dissents; in which case the Prefect is to name a valuer. The Mayor is to inform the owner of the day on which the valuation is to be made.

The report on the valuation is to set forth particulars of the condition of the property, and the indemnity which is awarded, having reference to the time of occupation or other circumstances.

The Prefect will then order the amount of valuation to be paid and temporary occupation of the land to be given, but in case of opposition to the sum offered it is to be paid into the bank (Cassa dei depositi), and he is then to authorise temporary occupation; and if the promoters deal otherwise with the land than they are authorised by the decree of the Prefect to do, they are to be subject to the payment of further indemnity.

In cases of urgency, caused by the sudden fall of bridges, rupture of canal or river banks, or like matters, the Mayor may give such orders as he deems necessary, notice of which is at once to be given to the Prefect and Sub-Prefect, who is to make decree and state the indemnity to be paid to the owners of land affected by the necessary reparations, when if they do not accept the sum offered, the same is to be paid into the Cassa dei depositi to be judicially determined. Any temporary occupation is in no case to exceed two years.

The regulations concerning the formation of military works set forth that on the issuing of a royal decree for the construction of fortifications or other military works, the officer in charge of such works shall prepare a statement describing the property to be expropriated, and the compensation offered by the military administration for transmission to the Prefect, in order that he may make it public in the commune or communes in which the works are intended to be formed. After which the regulations applicable to the expropriation of property are in other respects to be carried out, but in cases of absolute urgency the military authorities of the locality may take immediate possession.

The fourth division provides—

That whenever a decree of public utility is published, setting forth that the value of an adjoining owner's property is improved by reason of the increased value which will accrue

to his land in consequence of the work intended to be done, the following regulations are to be observed.

The contribution of the owner of the improved property shall be one-half of the improved value conferred on his land, to be paid in tenths extending over ten years, or he may give up his property on receiving a fair compensation.

In order to secure payment, the improved land is to become mortgaged to the promoters.

The fifth division treats of dealing with historical monuments or antiquities which may be taken either from the State, the Province, or the Commune. The declaration of public utility must be made on a requisition of the Minister of Public Instruction. If the indemnity cannot be amicably settled, it must be determined as in the case of private property.

The sixth division, treating of the preparation of projects for town, street, and sanitary works, provides—

That Communes containing a population of 10,000 inhabitants may, if required for the public advantage, prepare plans, showing the lines to be observed in the reconstruction of such part of the Commune in which the existing buildings are of vicious construction.

The plans of the proposed works are to be made public by the Mayor, and the Communal Council shall consider any opposition to them. If the Communal Council allows the oppositions, the plan is to be referred to a Provincial Council, who are to report on the merits of the plan, and any opposition thereto. When the plans have been submitted to the Superior Council of Public Works, and to the Provincial Sanitary Council, and finally settled, a decree is to be made thereon; a time is to be fixed, not exceeding twenty-five years, within which the plan is to be carried out. The decree of approval shall be published by the Mayor, and within a month notification given to every proprietor

of property affected. If any proprietor affected by the proposed improvements desires to modify or reconstruct his building, to conform to the decreed plan, he must, in doing so, conform to the deposited plan of the improvements, but for any works done by a proprietor in contravention of the deposited plan, he is to be subject to a fine of 1,000 lire.

The approval of the regulating plan "piano regolatore" is to be taken as equivalent to a decree of public utility.

The seventh clause regulates the enlargement of Communes, and provides that, where it has become a necessity to extend the habitable area, the plans are to be dealt with as described in the last article.

If, for the execution of the plan as settled, land is required for the formation of public roads, the proprietor, on being required to do so, shall, without any other formality, be required to surrender it; the compensation to be determined as provided under the fourth clause of the first chapter of this Law, subject to any local regulations which are applicable.

The third and concluding chapter deals with certain prescribed legal conditions under which the works authorised by the Act are to be carried out.

Mr. T. Chatfeild Clarke (Fellow) was glad the pleasant duty of proposing the vote of thanks to Mr. I'Anson had fallen to his lot, as it enabled him to be among the first to congratulate him on his recent appointment to the post of President of a kindred Institution—the Royal Institute of British Architects. The honour done him by the two Institutions in successive years was a just recognition of a long and distinguished career, during which he had persistently upheld the best traditions of the two professions.

Then, The President afforded an example to younger men, from the fact that he rarely went abroad without

bringing home materials for an interesting and instructive Paper, either for this Institution or for the Royal Institute of British Architects. He (Mr. Clarke) when recently in Rome had been much struck with the extensive improvement in the north-east of that city to which Mr. I'Anson had referred. It must strike every visitor to Rome that its narrow and crowded streets presented conditions very inimical to the health, comfort, and convenience of the inhabitants, and the Italian Government were acting with great wisdom in the course they were taking for the improvement of their capital. He had been recently staying in the part of Florence where similar improvements, referred to in the Paper, had been carried out, but it was observable that, owing to the transference of the Government from Florence to Rome, this part of the city was not fully inhabited, and he feared yielded but a scanty return on the outlay of those concerned in its development.

A part of the Paper which was likely to prove very useful, in connection with discussions which must come on at no very distant date, was the portion in which The President had set out the conditions under which land was taken by the State or by the Municipality. He gathered from the Paper that under no cirumstances was the subject remitted to a jury.

The President explained that the Report from which he had quoted set out in great detail all the preliminary steps. He was not, however, clear as to the subsequent proceedings, but it appeared that when a difficulty arose the matter was remitted to the judicial councils. What took place in the judicial councils he was unable to state.

Mr. Clarke, resuming, said that this struck him as a somewhat singular defect in a country so free and so justly

governed as Italy, though many of the regulations seemed to be of a very equitable and ingenious character. The Paper would well repay study, and could not fail to be of interest, relating, as it did, to the city of all cities—the beautiful and eternal city of Rome.

Mr. Collins having briefly seconded the vote of thanks, and expressed his appreciation of the Paper,

Mr. W. Woodward (Professional Associate) said that the details of procedure with which the Paper concluded could not fail to be of the greatest value when the schemes of reconstruction for London came to be discussed. In Brussels, in Vienna, in Paris, in Milan, and lastly in Rome, the authorities had not been content with providing merely for the exigencies of the day, but had considered the future also; and the manner in which this had been done in Rome was a significant lesson for all. Not long ago he had ventured to say that London—a city certainly equal in wealth to the cities he had just mentioned—ought to provide not only for present requirements, but for future needs; and there were gentlemen in the room who seemed to think that London had got along very well so far, and that no further provision was necessary for a population increasing in a ratio vastly greater than the population for which the Municipality of Rome had so wisely provided.

One very important and useful provision made by the Municipality of Rome, in connection with contemplated improvements, was the public exhibition, for 15 days, of the projects proposed to be carried out. He ventured some time ago to urge, in the columns of the *Times*, that if such an exhibition had been made of the lines of streets proposed by the Metropolitan Board of Works, many of these new streets would never have been formed, and others would have

been greatly improved by being subjected to the criticisms of competent surveyors, architects, and engineers, and of the public generally.

The provision of open spaces and gardens was another important point raised in the Paper, and, above all, the formation of an outer boulevard. He had himself proposed such a boulevard for London, and he now learned for the first time that it was actually contemplated in the City of Rome. A boulevard encircling London would add much to its health and greatly to the means of communication between the city, its suburbs, and the outlying districts.

The Chairman would like to add his meed of praise to The President for his Paper, which would be extremely interesting to read, and would be of great use, especially the latter part of it, in connection with the so-called amendment to the Lands Clauses Act which the Council were about to consider. He might mention in this connection that he had had some little to do with the Lands Clauses Act, and he was of opinion that it had worked on the whole exceedingly well, and that it would be very difficult to amend it.

The President, in reply, said he was extremely gratified by the kind manner in which his professional friends had moved the vote of thanks and had received his Paper. Its preparation had been to him a labour of love, and he would be amply compensated for any trouble he had taken if it proved useful to the Members of the Institution.

The vote of thanks having been put and carried unanimously, the Meeting adjourned.

THE ANNUAL GENERAL MEETING,

Monday, May 31st, 1886.

EDWARD I'ANSON (PRESIDENT) in the Chair.

Messrs. G. J. BROWN and W. H. STRUDWICK having been requested to act as Scrutineers of the ballot for the Election of Council, the balloting list submitted by the Council in accordance with the By-laws and the record of attendance of the Members of Council were read, and the ballot declared open.

The Report of the Council on the state of the Institution and the Statement of Receipts and Expenditure for the year 1885 were read.

RESOLVED—"That the Report of the Council and the Balance Sheet be received and approved, and be printed and circulated with the 'Transactions.'"

RESOLVED—"That the thanks of the Institution be given to Messrs. A. GARRARD and G. TAYLOR for the efficient performance of their duties as Auditors, and that they be requested to continue their services for the ensuing year."

RESOLVED—"That the thanks of the Institution are due and be given to the President, the Vice-Presidents, and the other Members and Associates of Council, for the able manner in which they have administered the affairs of the Institution."

RESOLVED—"That the thanks of the Institution be given to Mr. JOHN WORNHAM PENFOLD (the Honorary Secretary), to Mr. JULIAN C. ROGERS (the Secretary), and other officers of the Institution, for the able manner in which they have executed their several duties."

THE PRESIDENT presented the following prizes won by Candidates in the Professional Examinations 1886:—

THE INSTITUTION PRIZE OF £15 15*s.*

To WALTER FREDERICK PHYSICK, placed second* in the Students' Proficiency Examination 1886.

THE SPECIAL PRIZE OF £10 10*s.*

To WALTER FRANK PERKINS, placed third* in the Students' Proficiency Examination 1886.

THE DRIVER PRIZE OF £15 15*s.*

To ALFRED ROODS, placed first in the Examination (1886) for Non-Student Candidates for the Class of Professional Associates.

* *The Candidate who passed at the head of the list was precluded by age from competing for Prizes.*

The ballot having been closed, the Scrutineers reported that the following gentlemen had been elected as

COUNCIL FOR THE ENSUING YEAR.

President.

WILLIAM JAMES BEADEL, M.P.

Vice-Presidents.

ELIAS PITTS SQUAREY	FRANCIS VIGERS
ROBERT COLLIER DRIVER	CHARLES JOHN SHOPPEE

Members of Council.

THOMAS CHATFEILD CLARKE	ROBERT LAKE COBB
DANIEL WATNEY	ALEXANDER MILNE DUNLOP
JAMES MARTIN	CHRISTOPHER OAKLEY
WILLIAM FOWLER	ROBERT VIGERS
HENRY JAMES CASTLE, SEN.	THOMAS MILLER RICKMAN

ROBERT GEORGE CLUTTON

Professional Associate of Council.

EDWARD SMYTH.

Associates of Council.

JOHE WOLFE BARRY	SIR RICHARD EVERARD WEBSTER, Q.C., M.P.

RESOLVED—"That the thanks of the Meeting be given to Messrs. G. J. BROWN and W. H. STRUDWICK for their services as Scrutineers."

A vote of thanks to THE PRESIDENT for his conduct in the Chair having been passed unanimously, the Meeting separated.

THE EIGHTEENTH

ANNUAL REPORT OF THE COUNCIL.

Annual General Meeting, May 31st, 1886.

During the past year 55 new Members have been elected, viz., 3 Honorary Members, 25 Fellows, 22 Professional Associates, and 5 Associates,—making, with 34 new Students who passed the Preliminary Examination in January last, an addition of 89 new names to the roll.

Against this, however, has to be placed a large deduction representing losses by death, retirement from the profession, or from inability to maintain the payment of Subscriptions, and Students who have passed out of the class by effluxion of time, leaving a net increase of 19 of all classes.

There has been a slight increase in the income proper during the year, due in part to additional Subscriptions, and in part to a slight increase in the amount of fees received for hire of arbitration rooms. On the Capital side of the account a further sum of £2,000 has been invested in New 2½ per Cents.

The Balance Sheet for the year ending the 31st December, 1885, shows the following results:—

Receipts.	£	s.	d.
Total Revenue	3,717	5	8
Revenue Balance in hand, January 1st, 1885	250	6	4
Entrance Fees carried to Capital Account	255	3	0
Interest	8	17	0
Transferred from Revenue	1,820	0	0
Capital Balance in hand, January 1st, 1885	84	8	9
	£6,136	0	9

Expenditure.	£	s.	d.
Total Payments out of Revenue — Current Expenses	3,784	18	5
Examinations	145	3	10
Revenue Balance in hand, December 31st, 1885	37	9	9
Total Payments out of Capital — Furniture and Fittings	30	6	0
Investments	2,000	0	0
Capital Balance in hand, December 31st, 1885	138	2	9
	£6,136	0	9

The Institution investments stood at Christmas 1885 as follows, viz.:—£2,541 9*s.* 6*d.*, Consols, on Revenue Account; £6,350 15*s.* 10*d.*, New 2½ per Cents., on Capital Account; £539 11*s.* 2*d.*, Reduced 3 per Cents., on Library Account; and £228, North British Railway Preference Stock, on account of the Crawter Bequest.

A summary of the Receipts and Expenditure for the year 1886 up to the present date shows the following results:—

RECEIPTS.

	£	*s.*	*d.*
Total Revenue . .	3,048	14	4
Revenue Balance in hand, January 1st, 1886	17	9	9
Entrance Fees . .	134	8	0
Interest	4	8	2
Capital Balance in hand, January 1st, 1886	138	2	9
	£3,343	3	0

EXPENDITURE.

	£	*s.*	*d.*
Payments out of Revenue — Current Expenses . . .	1,132	3	8
Examinations . .	130	17	6
Revenue Balance in hand, May 31st, 1886	803	2	11
Payments out of Capital	7	10	0
Investments . . .	1,000	0	0
Capital Balance in hand, May 31st, 1886	269	8	11
	£3,343	3	0

A sum of £1,000 has been added to the investments in New 2½ per Cents. during the present year.

The total liabilities at the present date do not exceed £30.

The unabated interest in the proceedings of the Ordinary General Meetings is attested by the Volume of "Transactions" (the eighteenth of the Series) now approaching completion. The Council have endeavoured, as far as possible, to consult the tastes and interests of the various classes of Members in the order in which the Papers have been taken, and this has necessitated the holding over of several excellent Papers until next Session. The welfare of the Institution is very largely dependent upon the character of the Papers read and of the Discussions that take place at the fortnightly Meetings. The collection and dissemination of information

was one of the principal purposes for which the Institution was established, and it may be claimed for the "Transactions" that they have admirably served this purpose.

It appeared, however, to the Council that something further might be done in the same direction, without trenching in any way on the proper province of the "Transactions," by means of an occasional publication comprising short items of professional information of the nature and under the title of "Professional Notes." The two numbers of the new publication already in the hands of the Members will enable them to form an opinion as to the nature of the experiment. Whether it will be justified by success will depend upon the support it receives from the Members. The plan of the "Professional Notes" is wide enough to embrace every kind of contribution, and, as Members come to recognise their practical utility, the number of original contributions and items of interest communicated will, it is hoped, be largely multiplied.

The scheme of the "Notes" is set forth in sufficient detail on the cover of each issue, but it may not be without interest to state some of the reasons which influenced the Council in introducing one or two of the leading features of the publication. Some of the Members, living at a distance from London, having from time to time expressed regret at their inability to attend and take part in the Ordinary General Meetings of the Institution, the Council have endeavoured to afford them an opportunity of contributing their share to the Discussions, by providing a section in the "Notes" for the publication of written communications relating to Papers read at the Ordinary General Meetings. It may be observed that, up to the present moment, Members have not availed themselves to any appreciable extent of this means of expressing their views.

Other Members have been in the habit of addressing

inquiries to the Institution with reference to points of professional practice, receiving in reply such information as happened to be at hand or easily accessible.

Section III. of the "Notes" is designed to assist Members seeking information, by giving the widest possible publicity to their inquiries. The system adopted for the purpose is as follows:—The inquiry is at once put into print and forwarded, with a request for information, to a Member or Members whose experience is likely to furnish the reply. Any answer received is forwarded direct to the Member for his immediate information, and is subsequently published in the next issue of the "Notes," together with the question to which it relates, and any further answers received in the interval. This Section should (and it is believed will) prove extremely useful as a new channel for the interchange of professional knowledge.

The Legal Section of the "Notes" will form eventually a complete register of leading law cases.

The Library has received considerable additions during the year, both from presentations and the purchase of books. It may now be claimed for it that it comprises a practically complete collection of English Topography. Among recent acquisitions may be mentioned a bound set of the *Times* newspaper, from the year 1827 to the present date, with the exception of the years 1872 to 1876. A set of the 1-inch ordnance maps for the whole of England has also been purchased by the Council during the year.

In accordance with the requirements of the Metropolis Management and Building Acts Amendment Act, 1878, the Metropolitan Board have recently submitted to the Institution some proposed Addenda to the By-Laws of the Board. Assisted by a large Committee, comprising some of the most experienced Members of the Institution, the Council drafted and forwarded to the Secretary of State

(the confirming authority) amendments to the proposed By-Laws which would tend in their opinion to the better carrying out and the clearer comprehension of the objects in view.

The Examinations continue to attract an increasing number of Candidates, notwithstanding that proof is now required of previous practical experience in a Surveyor's office. About the usual proportion have satisfied the Examiners, but the Council will look for a better knowledge in some of the more important subjects on future occasions.

The following tabular statement exhibits the number of Candidates, successful and unsuccessful, who have offered themselves for examination during the six years 1881-86 :—

Year.	Preliminary Examinations.		Professional Examinations.	
	Candidates.	Passed.	Candidates.	Passed.
1881	13	6	2	1
1882	30	17	0	—
1883	44	22	25	22
1884	51	30	36	23
1885	46	37	43	31
1886	46	34	56	38
Totals	230	146	162	115

The thanks of the Council are again due to the gentlemen who have so zealously and efficiently discharged the duties of Examiners. The names of these gentlemen have been so frequently mentioned in previous reports in connection with similar services to the Institution, that they will at once occur to the Members.

The Council have carefully watched various measures recently introduced into the House of Commons affecting

the interests with which Surveyors are identified. It is impossible to regard some of these proposals as serious projects of legislation, or to look upon others as framed with a due sense of the consequences likely to result from their finding their way into the Statute Book. In the first category may be placed the Bill, backed by Mr. Bradlaugh, for the ejection of owners of land not cultivated, despite the fact that its cultivation would entail a loss; and in the latter, the Bill for amending the Land Clauses Acts, which passed the second reading on the 12th instant.

The "Copyhold Enfranchisement Bill" was carried from the House of Commons to that of the Lords, and it contained, with reference to copyhold and customary lands, provisions for enfranchisement procedure similar to those in the Bill which was debated last year by the Peers. As regards the amount of compensation to lords of manors, the Bill proposed that the Land Commissioners should publish such a scale "as in their judgment will facilitate enfranchisement"; and the former reference to the parochial assessments was omitted. The enfranchisement rent-charges would be redeemed after ten years, if so desired by the payee, instead of redemption being only at the option of the payer. The Bill duly appeared in the official list of those before the House of Lords, but has been dropped out of it during the past week.

In conclusion, the Council tender their thanks to the Members for their cordial support in the discharge of the trust committed to them, and for the kindly readiness with which, on all occasions, they have acquiesced in the steps they have taken for furthering the welfare of the Institution.

Dr. Statement of Receipts and Expenditure

RECEIPTS.

1885.	£ s. d.	£ s. d.	£
639 Fellows' Subscriptions for 1885, at £3 3s.	2,012 17 0		
1 " " in advance for 1886, at £3 3s.	3 3 0		
3 " " arrears at £3 3s.	9 9 0		
2 " " " part paid	3 10 4		
1 Difference of Subscription on Transfer	1 1 0		
		2,030 0 4	
364 Professional Associates' and Associates' Subscriptions for 1885, at £2 2s.	764 8 0		
1 Professional Associate's Subscription in advance for 1886, at £2 2s.	2 2 0		
13 Professional Associates' Arrears, at £2 2s.	27 6 0		
1 " " " part paid	1 1 0		
		794 17 0	
76 Students' Subscriptions for 1885 at £1 1s.	79 16 0		
1 " " Arrear	1 1 0		
		80 17 0	
			2,905
Hire of Arbitration Rooms			609
Dividends			201
Cash at Bankers and in hands of Secretary, January 1st, 1885			250
			£3,967

CAPITAL.

	£ s. d.	£ s. d.	£
35 New Fellows' Entrance Fees for 1885, at £5 5s.	183 15 0		
7 Fellows' Entrance Fees, Balance on Transfer, at £2 2s.	14 14 0		
		198 9 0	
18 New Professional Associates' and Associates' Entrance Fees for 1885, at £3 3s.		56 14 0	
			255
Interest on £228 North British Railway Preference Stock (Crawter Bequest)			5
Transferred from Revenue			1,820
Balance at Bankers, January 1st, 1885			85
			£2,166

LIBRARY.

Donations to December 31st, 1885	£
Dividends	13
Sale of Duplicates	1
Balance at Bankers, January 1st, 1885	(
	95
	£245

S

	£
Revenue Account	3,965
Capital "	2,166
Library "	245
	£6,378

ASSETS

	£ s. d.	£
Cash at Bankers and in hands of Secretary		£
Value of Furniture and Books		285
Investments—Consols		3,650
" New 2½ per Cents.	2,541 9 6	
" Reduced 3 per Cents.	6,350 15 10	
" North British Railway Preference Stock	539 11 2	
	228 0 0	
		9,659
Subscriptions and Entrance Fees due, but unpaid at date		104
Fees for use of Rooms due, but unpaid at date		86
Value of Premises, No. 12, Great George Street		6,000
		£19,786

E YEAR ENDING DECEMBER 31ST, 1885. Cr.

COUNT.

EXPENDITURE.

885.	£ s. d.	£ s. d.
rance, Rates, and Taxes	243 15 0	
Light, and Water	125 1 9	
	68 6 6	
irs		437 3 3
nery, Postage, and Receipt Stamps, Books of Account, Publications, &c.		49 11 0
ies and Wages		163 12 7
ehold Effects, Housekeeper's Petty Cash Expenses, Tea, Coffee, and Sundry Disbursements		780 14 6
inations—Examiners' Fees £66 3 0		71 11 6
Printing, Lithography, and Hire of Instruments 71 12 3		
Advertisements 17 10 4		
General Expenses 8 18 9		
164 4 4		
Less Candidates' Fees forfeited, £34 13*s.*, and Sale of Books of Rules, £9 7*s.* 6*d.* 44 0 6		
	120 3 10	
Prizes	25 0 0	
		145 3 10
cation of "Transactions"—Printing and Lithography	356 18 6	
Covers and Binding	21 13 4	
Reporting	39 18 0	
	418 9 10	
Less Sale of "Transactions" and Covers	66 8 7	
		352 1 3
ral Printing		74 17 0
ing		29 15 9
Charges, Brokerage, and Advertisements		5 11 7
sferred to Capital		1,820 0 0
at Bankers and in hands of Secretary, December 31st, 1885		37 9 9
		£3,967 12 0

COUNT.

	£ s. d.
iture and Fittings	30 6 0
nase of £2,282 10*s.* 7*d.* New 2½ per Cents.	2,000 0 0
nce at Bankers, December 31st, 1885	138 2 9
	£2,168 8 9

COUNT.

	£ s. d.
nase of Books, Maps, &c.	132 7 2
nce at Bankers, December 31st, 1885	110 3 2
	£242 10 4

ARY.

	£ s. d.
nue	3,930 2 3
al	2,080 6 0
ry	132 7 2
ce at Bankers and in hands of Secretary, December 31st, 1885	285 15 8
	£6,378 11 1

ABILITIES.

	£ s. d.
uarter's Rent to Christmas 1885	62 10 0
Housekeeping, Printing, and various Accounts	237 11 4
ce	19,486 17 1
	£19,786 18 5

xamined with the Books and Vouchers, and found correct,
ARTHUR GARRARD, } *Auditors.*
GEORGE TAYLOR, }

APPENDIX TO VOL. XVIII.

Obituary.

JOHN JOSEPH BATEMAN (Fellow) was educated at Chesterfield, and entered the office of his father (an Architect in large practice at Birmingham) at the age of 17, where he remained for six or seven years, after which he went to London to acquire further experience, in the office of Messrs. Debenham, Tewson, & Co. After spending two years with them he returned to Birmingham and joined his father in business as an Architect and Surveyor, but his health breaking down he was compelled to retire from active work for a time and seek rest and change. For this purpose he was staying at Battle, in Sussex, when he met with an accident on the railway which resulted in his death. Mr. Bateman was elected a Fellow of the Institution in December 1884.

EDWYN EVANS CRONK (Fellow) was born in the year 1821, and entered the profession about the year 1839. He commenced by assisting his father, who was a Land Agent, at that time busily engaged in rating and assessing the Commutation of Tithe for the Tithe Commissioners in many parishes. He was also engaged in surveying several Lines of Railways projected in the county of Kent. In the year 1845 he started in business for himself at Sevenoaks, and from that period worked up a large business, acting for many noblemen and gentlemen in the neighbourhood. He was also extensively engaged as a Valuer in Railway and Drainage Compensation cases, and in all matters relating to Agriculture. He also assessed the rating of several parishes, and from his large and varied experience

his opinion was often sought as an Umpire. Some years ago he was appointed Land Surveyor for a portion of St. Bartholomew's Hospital Estates. At large meetings, held by the Valuers of Kent, Surrey, Sussex, and Hampshire, at the Bridge House Hotel, in January and March 1884, for the purpose of discussing the Agricultural Holdings Act and framing rules for their guidance, he was unanimously elected Chairman.

At one time he carried on farming extensively, but of late years confined his operations to a small scale. He was identified with most of the philanthropic movements in the town in which he resided, and took an active part in all local matters, having been Member of the Local Board from its formation, and Chairman of the Sevenoaks Gas Company, and Director of the Sevenoaks Water Company.

Mr. Cronk was elected a Fellow of the Institution in May 1874. He died at his residence at Sevenoaks, on February 18th, 1886, in the 65th year of his age.

EDWARD DAVID (Fellow) was born at Radyr Court, near Cardiff, in 1822. After completing his education at King's College, London, he assisted his father on Tithe Surveys and the purchase of land for the South Wales Railway. In 1850 Mr. David entered the office of Messrs. Clutton, of 9, Whitehall Place, where he obtained a large experience in the management of Church property. In 1855 he left Messrs. Clutton's office, to enter into partnership with his brother, Mr. Evan W. David, who had succeeded to his father's business of Land Agent. Mr. David, at this time, became the local Agent for the property of the Ecclesiastical Commissioners in the counties of Glamorgan, Monmouth, and Hereford, and was much engaged in carrying out the Enclosure of Commons. Mr. David suffered a great loss in 1872 by the death of his brother and

partner, his great capacity for work being tested severely, as he was, at the time, much occupied in the purchase of land for the Great Western Railway Company. In 1880 he was called upon to give evidence before the Royal Commission on Agriculture. Mr. David was Agent for several properties in South Wales, including the Merthyr Manor and Llantrithyd Estates and the property of Jesus College, Oxford. He was one of the earliest Members of The Surveyors' Institution.

Mr. David died at Llandaff, where he carried on his business, on 25th March, 1885.

WILLIAM DEW (Fellow) was the son of Mr. Dew, of Llangefni, and was born on the 4th November, 1825. He was educated at the Grammar School of Tarvin, Cheshire. At an early age he was articled to Mr. Bodfan Griffith, then practising as a Solicitor at Bangor, and subsequently at Carnarvon. Not finding the study of the Law a congenial occupation, he was placed with Mr. Daniel Hodgkins, an Auctioneer and Valuer, in Dale Street, Liverpool. When about 23 years of age, Mr. Dew returned to Llangefni, where by his energy, courtesy, and fairness he succeeded in developing one of the largest businesses in Wales, under the style of Messrs. W. Dew and Son, of Bangor and Rhyl.

Personally Mr. Dew was one of the most genial of men, a kind-hearted neighbour, and a true friend.

Mr. Dew took great interest in local affairs, and his appointment as a Governor of the University College of North Wales was a tribute to his earnest interest in the educational welfare of his countrymen. His nomination by the Lord-Lieutenant of Carnarvonshire (about two years before his death) as a Justice of the Peace for that county, was also a deserved recognition of his public and personal worth.

Mr. Dew was active in establishing the present North Wales Black Cattle Society. He was appointed its Honorary Secretary, and in 1883 edited and superintended the publication of its first volume, known as the "North Wales Black Cattle Herd Book."

Mr. Dew was elected a Fellow of the Institution in February 1882. His death by congestion of the lungs took place very unexpectedly in London, on the 30th October, 1885, in the 60th year of his age.

HENRY PAFOOT FOSTER (Fellow) was born at Portsmouth in the year 1840, and after receiving his education at the Diocesan Grammar School in that town, and subsequently at King's College, London, was articled in 1857 to Mr. Thomas Hellyer, Architect, of Ryde. Starting in practice on his own account at the expiration of his articles, he executed some creditable work in the neighbourhood of Portsmouth and Ryde, and then came to London and began business in John Street, Adelphi, as a Quantity-Surveyor.

He soon achieved considerable eminence in this branch of the profession, and succeeded in retaining his early connection in the country, where he acted as Surveyor to the Borough Jail, the Borough Lunatic Asylum, and the Gladstone Buildings at Portsmouth, the Ventnor Consumption Hospital, Appley Towers, Isle of Wight, and the Convalescent Home at Ryde. In London he was equally fortunate in securing and retaining the confidence of many of the principal London Architects and Engineers.

Mr. Foster was elected a Fellow of The Surveyors' Institution in March 1884, and died suddenly in October 1885, having earned a considerable reputation for the care and skill with which his work was conducted.

CHARLES FRANCIS HUMBERT (Fellow) commenced his professional career as an articled pupil in the office of Mr. Fuller, Architect and Surveyor of Chichester, passing from thence to a Surveyor's office in Devonshire, and subsequently entering the Tithe Commission Office at Somerset House, under Colonel Dawson, where he became head of his department. He settled in Watford in 1842, as a Surveyor and Auctioneer, and was appointed to the management of the estates of the Earl of Essex, the Earl of Clarendon, and several other landowners; also carrying on business in London. Mr. Humbert retired from business at Christmas, 1884. In his capacity of Chairman of the Local Board of Health, he was one of the first promoters of the Watford Public Library, an institution in which he took a deep interest. He was a Fellow of the Geological Society, and a Member of the Hertfordshire Natural History Society, serving for some years on the Council of that Society. He was also one of the Governors of Watford Endowed School, appointed, under the Scheme, by the Local Board. Mr. Humbert joined the Institution immediately after its formation in 1868, and remained a Member till his death, which took place on the 4th March, 1885, in his 69th year.

GEORGE HENRY HUSSEY (Fellow), senior partner in the firm of Hussey, Walcott, & Blackford, began his professional career in the office of his father, the late William Hussey, of The Green, Hughenden,—a Land Agent and Surveyor of considerable standing in the county of Bucks. He afterwards became pupil and assistant to the well-known Land Agent, John Rolfe, of Beaconsfield, at whose death he was appointed successor to the agencies of Sir Gore Ouseley, Bart., Edward Polhill, Esq., and Sir Joseph Bailey, Bart.

On the death of his father, in 1849, Mr. Hussey became Agent to Richard Heming, Esq., J. Whittaker Maitland, Esq., the Rev. — Maitland, &c., &c., and R. Kidd, Esq. He was also intimately connected with several of the leading firms of solicitors in London, who placed great reliance on his judgment as a Land Valuer.

Mr. Hussey was one of the earliest to join the Institution, among the Members of which he had many warm friends.

His death took place suddenly, at Kew, of heart-disease, on the 15th February, 1885, in the 66th year of his age.

DOUGLAS KINGSFORD (Associate) was the eighth son of the Rev. Samuel Kingsford, of Faversham, and was born in 1840. He was educated at Trinity College, Cambridge, where he graduated as a Senior Optime in 1862, and was called to the bar at the Middle Temple in Michaelmas Term, 1867. Only a few months before his death he was appointed Recorder of the borough of Margate. Mr. Kingsford died at Kensington on the 12th of August, 1885, from rheumatic gout, after a short illness.

RICHARD HENRY RIGDEN (Fellow) was head of the old-established firm of land agents, Messrs. Rigden & Son, of Salisbury, having succeeded to that position on the death of his partner and brother-in-law, Mr. Francis Attwood, with whom he became first connected in business in the year 1830. For many years past Mr. Rigden acted as Agent to the Dean and Chapter of Salisbury, and represented in a similar capacity many other large landowners in Wiltshire and the adjoining counties. He was elected a member of the Town Council in 1860, and four years later Mayor of the City. In 1867 he was appointed one of the City Magistrates. For the many services he rendered as Treasurer of the Local Committee of the Bath and West of England

Agricultural Society on the occasion of its visit to Salisbury, he was presented in the same year with a valuable piece of plate. Mr. Rigden was one of the original Founder Members of the Institution, in which he always took considerable interest. His health had been failing for some weeks before his death, which took place suddenly of heart-disease on the 7th December, 1885, in the 71st year of his age.

LIST OF DONATIONS AND CONTRIBUTIONS TO THE LIBRARY FROM JUNE 1st, 1885, TO JUNE 1st, 1886.

DONATIONS OF BOOKS, MAPS, &c.

Donors.	Title of Work.
Agricultural Gazette, Editor of the	"The Agricultural Gazette," 1885-86.
Anderson, R.	"R. Anderson's Treatise on Lightning Conductors, their History, Nature, and Mode of Application."
Architect, Editor of the	"The Architect," 1885-86.
Barry, J. W.	"Map (dated 1824) of the Parish of Lambeth divided into Ecclesiastical Districts."
	"Leon B. Alberti's L'Architectura."
Bath and West of England Society	"Journal," 1885-86.
Beeston, F.	"F. Beeston's Archæological Description of Saltwood Castle."
British Architect, Editor of the	"The British Architect," 1885-86.
Builder, Editor of the	"The Builder," 1885-86.
Builder's Weekly Reporter, Editor of the	"The Builder's Weekly Reporter," 1885-86.
Building News, Editor of the	"The Building News," 1885-86.
Burtenshaw, A.	"Dent's Annals of Winchcombe and Sudeley."
Cassell, J. R.	"Pugin's Contrasts," 1836.
Cheston, C.	"Poulson's Beverley," 1829.
Cook & Hammond	"Northern portion of Cook & Hammond's New Map of the Railways of England and Wales."
Cooper, A. L.	"Coates's History of Reading," 1802.
Contract Journal, Editor of the	"The Contract Journal," 1885-86.
Cripps, C. A.	"Cripps' Treatise on the Principles of the Law of Compensation," 2nd edition.
Elliott, C.	"C. Elliott's Improved Farmer's Complete Account Book," 2nd edition.
Estates Gazette, Editor of the	"The Estates Gazette," 1885-86.
Eves, G.	"Ellis's Chiltern and Vale Farming."
Farmers' Club, The	"Journal," 1885-86.
Field, Editor of the	"The Field," 1885-86.
Greenop, E.	"Feltham's Tour through the Island of Mann in 1797-98."

Donors.	Title of Work.
Grantham, R. B., and Topley, W.	"Report of the British Association on the Erosion of the Sea-coasts of England and Wales," 2 copies.
Haywood, Lieut.-Colonel	"Report on the Works executed by the Hon. the Commissioners of Sewers of the City of London during the year 1885."
	"Report on the Proposed Improvement on the Eastern Side of St. Paul's Churchyard."
	"Reports as to the Commissioners' Undertaking to supply Electricity in a District of the City, and Various Proposals for Lighting by Electricity."
	"Report on the Formation of Subways in the Vicinity of the Mansion House."
Haywood, H. and W. M.	"Gregson's Lancashire."
Hannen, R. S.	"Lowe's British Grasses."
Hedges, K.	"Killingworth Hedges' Treatise on Precautions to be adopted on introducing the Electric Light."
Hedley, T. F.	"T. F. Hedley's Treatise on Local Taxation and the Rating of Workhouses, Board and other Schools, &c."
Holden, J.	"J. Holden's Treatise on Easements and Rights of Light."
Horticulture, Journal of, Editor of the	"Journal of Horticulture," 1885-86.
Hull, C.	"Raine's History of the Parish of Blyth."
	"Gough's History of the Parish of Myddle."
I'Anson, W. B.	"Gent's History of Hull," 1735.
Ingleby, H.	C. M. Ingleby's "Shakespeare and the Inclosure of Common Fields at Welcombe."
Institution of Civil Engineers	"Minutes of Proceedings," 1885-86.
Institution of Civil Engineers of Ireland	"Transactions," 1885-86.
Institution of Mechanical Engineers	"Proceedings," 1885-86, and "General Index to Proceedings," 1874-1884.
Iron, Editor of	"Iron," 1885-86.
Land and Water, Editor of	"Land and Water," 1885-86.
Land Agent's Record, Editor of the	"The Land Agent's Record," 1885-86.
London and Middlesex Archæological Society	"Transactions," 1885-86, and "F. C. Cass's History of East Barnet," Part I.
Martin, H. O.	"Mackay's River Thames," and "White's Worksop."
McClellan, The Rev. J. B.	"Muir's Principles of Chemistry."
Merrett, J.	"Bayne's History of Eastern England," 2 vols.
Metropolitan, Editor of the	"The Metropolitan," 1886.
Ministry of Public Works of Rome	"Journal of the Civil Engineers of Rome," 1885-86.
Nixon, T.	"Palmer's History of Great Yarmouth," 3 vols.
Noel, B. B.	"Tunicliff's Western Survey," 1791.
Nottage, W. G.	"Oliver's Monasticon."

Donors.	Title of Work.
North of England Institute of Mining and Mechanical Engineers	"Transactions," 1885-86.
Peck, W. R.	"Baine's History of Lancashire," 2 vols.
	"Wheeler's History of Manchester."
	"Teesdale's Map of Lancashire."
	"Banks' Plan of Manchester and Salford."
Pooley & Sons	"Memoir of John Wyatt, Master Carpenter and Inventor."
Patent Office	"Complete set of the Illustrated Journal of Patented Inventions."
	"Abridgments of Patents," 12 vols.
Rickards, A. G.	"Howel's Londonopolis," 1657.
Robins, E. C.	"E. C. Robins' Pamphlet on the Site of the New Admiralty and War Offices."
	"E. C. Robins' Papers on Technical Education, Applied Science, Buildings, Fittings, and Sanitation."
	"E. C. Robins' Essay on the Form and Style of Architecture of the Temple of Solomon."
	"Westgarth Essays on the Street Realignment, Reconstruction, and Sanitation of Central London, and on the Rehousing of the Poorer Classes."
Royal Agricultural Society of England	"Journal," 1885-86.
Royal Institute of British Architects	"Journal of Proceedings," 1885-86, and "Transactions," Vol. 1 (new series).
Ryde, E. and A. L.	"E. and A. L. Ryde's Metropolitan Rating Appeals," 4th edition.
Sanitary Institute of Great Britain	"Transactions," Vol. 6.
Shropshire Land Agents' Society	"Proceedings," Parts 1 to 6.
Société des Géomètres	"Journal," 1885-86.
Society of Engineers	"Transactions," 1884.
Smith, W.	"Bigsby's History of Repton."
Spon, E. and F. N.	"Merrett's Land and Engineering Surveying," 4th edition.
Stacey, H.	"Burn's History of Henley-on-Thames."
Statistical Society	"Journal," 1885-86.
Todd, W. H.	"Brewster's History of Stockton-upon-Tees."
Watson, J., Jun.	"Donovan's South Wales," 1805, 2 vols.
Warren, R. A.	"Guest's Historic Notes of Rotherham."
Wilks, R.	"Parnell's Grasses of Great Britain."
Woodward, Wm.	Wm. Woodward's Paper, "The Sanitation and Reconstruction of Central London."
Wyley, W. J.	"Riley's Memorials of London and London Life."
	"Worlidge's Systema Agriculturæ," 1675.

CONTRIBUTIONS IN MONEY.

	£	s.	d.
C. Barker	1	1	0
G. Brinsley	1	1	0
L. Burd	2	2	0
T. Colgate, Jun.	1	1	0
S. B. L. Druce	2	2	0
B. S. Dunning	1	1	0
J. Greaves	1	1	0
W. R. Halkyard	1	1	0
A. Hanson	2	2	0
J. A. Harman	2	2	0
W. B. Hill	2	2	0
G. E. Hilliard	2	2	0
W. Hodsoll, Jun.	1	1	0
W. Lethbridge	1	1	0
G. E. Pym	2	2	0
The Hon. H. R. Scott	2	2	0
H. Sworder	2	2	0
R. Tarleton	2	2	0
R. Troutbeck	1	1	0
G. Wakefield	1	1	0
E. R. Walker	1	1	0
H. J. Wyley	2	2	0

THE SURVEYORS' INSTITUTION

(Incorporated by Royal Charter),

12, GREAT GEORGE STREET, WESTMINSTER, S.W.

LIST OF MEMBERS, JULY 1st, 1886.

Honorary Members.

Date of Election and of Transfer.		
1874, Apr. 13	BEDFORD, HIS GRACE THE DUKE OF	81 & 82, Eaton Square, S.W.
1878, Nov. 11	BUCAILLE, EUGÈNE	168, Boulevard de Strasbourg, Havre, France.
1875, Mar. 15	CAIRD, SIR JAMES, K.C.B. . .	Land Office for England, St. James's Square, S.W.
1877, Jan. 15	CONSTABLE, JOHN, The Rev. . .	Marston Bigot, Frome, Somersetshire.
1886, Jan. 11	CULLEY, GEORGE	Office of Woods, Forests, and Land Revenues, 1, Whitehall Place, S.W.
1880, Jan. 5	DERIVRY, MARIE AUGUSTE LOUIS	Noyon, Oise, France.
1880, Jan. 5	GILLET, GEORGES EDOUARD . .	Joinville, Haute-Marne, France.
1871, Jan. 30	GORE, CHARLES ALEXANDER, The HONORABLE	West Side, Wimbledon Common, S.W.
A. '81, Mar. 21 H.M. '86, Mar. 8	GRANTHAM, SIR WILLIAM . .	82, St. George's Square, S.W.
1880, May 10	HAMPDEN, THE RIGHT HON. LORD VISCOUNT	Glynde, Lewes, Sussex.
1883, May 21	HARTINGTON, THE RIGHT HON. THE MARQUIS OF	Devonshire House, Piccadilly, W.
1886, Jan. 11	KINGSCOTE, COLONEL ROBERT NIGEL FITZHARDINGE, C.B. .	Office of Woods, Forests, and Land Revenues, 1, Whitehall Place, S.W.
A. '69, Jul. 26 H.M. '71, Feb. 27	LEACH, GEORGE ARCHIBALD, LIEUT.-COLONEL	Land Office for England, St. James's Square, S.W.
1878, Nov. 11	LEFÈVRE, FRANÇOIS ETIENNE .	Sucy, Seine et Oise, France.
1885, Apr. 20	M'CLELLAN, JOHN B., M.A., The REV.	Royal Agricultural College, Cirencester.
A. '72, Jan. 15 H.M. '72, Apr. 22	RIDLEY, GEORGE	2, Charles Street, Berkeley Square, W.

Fellows.

p.). .	*Date of Election and of Transfer.*		
		The names of those Fellows who have qualified for the Class by Examination are distinguished thus*	
4	1884, Jan. 14	ABBOTT, ROBERT THOMAS G. .	Quarry Cottage, Norton, Malton, Yorkshire.
1	1868, Jun. 15	ADAMS, CHARLES FREDERICK .	Barkway, Herts.

Dip No.	Date of Election and of Transfer.	FELLOWS.	
1105	1884, Feb. 25	ADAMS, HENRY	60, Queen Victoria Street, E.C.
612	1881, Feb. 21	ADDIE, WILLIAM FORRESTER .	Powis Castle Estate Office, Welch Pool, Montgomeryshire.
982	1883, Dec. 17	ALLEN, HENRY ROBERT . . .	50, Finsbury Square, E.C.
597	A. '81, Jan. 10 / F. '84, Mar. 10	ANDERSON, ROBERT, JUN. . .	Cirencester.
287	1872, Dec. 9	APPERLEY, WILLIAM HAVARD .	Hereford.
198	1869, May 3	ARDING, CHARLES BENNETT. .	22, Surrey Street, Strand, W.C.
1133	1884, Apr. 21	ARMISTEAD, RICHARD . . .	118, Main Street, Bingley.
791	1882, Apr. 24	ARMSTRONG, THOMAS JOHN . .	14, Hawthorn Terrace, Newcastle-on-Tyne.
404	1875, Nov. 8	AUSTIN, RUSSELL GARDENER .	Hertford.
1005	A. '83, Dec. 17 / F. '84, Dec. 8	BAIRD, JONATHAN PEEL . . .	Estate Office, Somerley, Ringwood, Hants.
812	1882, May 22	BALLARD, EDMUND	Elwick House, Ashford, Kent.
479	1877, Mar. 12	BALLS, JAMES MAYHEW . . .	Castle Hedingham, Essex.
606	1881, Feb. 7	BANNISTER, THOMAS. . . .	Limehurst, Hayward's Heath, Sussex.
712	1882, Jan. 30	BARFIELD, FREDERIC HENRY .	Faringdon, Berks.
1259	1885, Mar. 9	BARKER, CALEB	Estate Office, Shadwell, Thetford.
983	1883, Dec. 17	BARNES, JOHN WILLIAM JAMES	Brougham Chambers, Wheeler Gate, Nottingham.
118	1868, Aug. 17	BARRY, CHARLES	1, Westminster Chambers, Victoria Street.
1056	1884, Jan. 28	BATE, THOMAS	Town Hall Chambers, Kilburn, N.W.
726	1882 Feb. 18	BATH, FRED	Crown Chambers, Salisbury, Wilts.
3	1868, Jun. 15	BEADEL, WILLIAM JAMES, M.P. (*President*)	97, Gresham Street, E.C.
136	1868, Nov. 2	BEAUMONT, GEORGE . . .	East Bridgford, near Nottingham.
1153	1884, May 5	BECK, EDMUND	Sandringham, Norfolk.
525	1879, Jan. 6	BEDELLS, CHARLES KING . .	6, John Street, Bedford Row, W.C.
317	1873, Dec. 8	BEESTON, FREDERICK . . .	30, Lincoln's Inn Fields, W.C.
630	1881, Dec. 19	BELL, GEORGE GRAHAM . .	11, Pall Mall East, S.W.
388	1875, Mar. 1	BENNETT, THOMAS OATLEY . .	Bruton, Somerset.
1187	1884, May 26	BENINGFIELD, HENRY . . .	16, Union Court, E.C.
631	1881, Dec. 19	BERRIDGE, ROBERT	181, Bishopsgate Street Without, E.C.
1214	1884, Dec. 8	BERTWISTLE, JAMES	1, Tackett's Street, Blackburn.
984	1883, Dec. 17	BETTRIDGE, EDWARD . . .	11, Temple Row, Birmingham.
1239	1885, Jan. 12	BICKERTON, GEORGE ARTHUR .	62, King William Street, E.C.
190	1869, Mar. 22	BIDWELL, CHARLES	Ely, Cambridgeshire.
912	1883, April 2	BIDDELL, WILLIAM	Lavenham Hall, Suffolk.
596	1875, Apr. 12	BINGHAM, REUBEN	5, Bolton Street, Piccadilly, W.
131	1868, Oct. 26	BINNIE, THOMAS	207, Hope Street, Glasgow.
113	1868, Aug. 10	BIRD, JAMES BINFIELD . . .	14, Queen Victoria Street, E.C., and West Cowes, Isle of Wight.
1154	1884, May 5	BIRD, WALTER	61, Edgware Road, W.
772	1882, Mar. 13	BIRDSEYE, WILLIAM	99, Gresham Street, E.C.

Dip. No.	Date of Election and of Transfer.	FELLOWS.	
1320	1886, May 17	BIRKETT, WILLIAM	Charlbury, Oxon.
1262	1885, Mar. 23	BLAKE, FREDERICK	130, Queen Street, Portsea, Hants.
883	1883, Feb. 12	BLAKE, WILLIAM JOHN, JUN. .	2, Abchurch Yard, E.C., and 21, High Street, Croydon.
773	1882, Mar. 13	BLAKEMORE, WILLIAM AGUTTER	24, Salisbury Street, Strand, W.C.
1057	1884, Jan. 28	BLASHILL, THOMAS	10, Old Jewry Chambers, E.C.
1058	1884, Jan. 28	BLEWITT, EDWARD ROBERT . .	Rainham, Essex.
330	1874, Feb. 2	BOLAM, CHARLES GODFREY . .	82 & 83, Palace Chambers, S.W.
450	1876, May 8	BOLAM, WILLIAM THOMAS . .	Cross House, Westgate Road, Newcastle-upon-Tyne.
408	1875, Dec. 13	BOLDEN, JOHN LEONARD . .	Tehidy Office, Camborne, Cornwall.
199	1869, May 3	BOND, ERASMUS	22, Surrey Street, Strand, W.C.
24	1868, Jun. 15	BONNY, JAMES RIPPOTH . . .	Palmer's Hill House, Palmer's Green, Southgate, N., and 47, Old Broad Street, E.C.
960	A. '83, May 25 / F. '86, Apl. 12	*BONTOR, FRANK ARTHUR . .	29, Fleet Street, E.C.
813	1882, May 22	BOOKER, ALGERNON ERSKINE .	Albion House, Hyde Park Square, W.
632	1881, Dec. 19	BOTTERILL, WILLIAM . . .	23, Parliament Street, Hull.
1134	1884, Apr. 21	BOWER, WILLIAM JOHN . . .	6, St. James Street, Derby.
62	1868, Jul. 13	BOWLER, WILLIAM ANTHONY .	5, Museum Street, Ipswich.
1249	1885, Feb. 9	BOWLES, ARTHUR HUMPHREY .	Temple Court, near Guildford, Surrey.
633	1881, Dec. 19	BOYLE, EDWARD	14, Clement's Lane, E.C.
870	1883, Jan. 29	BRACKETT, WILLIAM . . .	27, High Street, Tunbridge Wells.
1059	1884, Jan. 28	BRAY, HARRY	14, Warwick Court, Gray's Inn, W.C.
727	1882, Feb. 13	BRERETON, FRANC SADLEIR . .	292, High Holborn, W.C.
953	1883, May 25	BRINSLEY, GEORGE	30 and 31, New Bridge Street, E.C.
1309	1886, Mar. 8	BRIDGFORD, ROBERT, C.B. . .	28, Cross Street, Manchester.
829	1882, Dec. 18	BRIDGEWATER, BENTLEY JAMES	80, Cheapside, E.C.
359	1874, Dec. 7	BROOK, JAMES	12, 13, & 14, Estate Buildings, Huddersfield.
919	1883, April 16	BROOK, THOMAS	28, John William Street, Huddersfield.
1060	1884, Jan. 28	BROWN, BRADSHAW	59, Fenchurch Street, E.C.
322	1874, Jan. 5	BROWN, DANIEL JOHNSON . .	61, Lincoln's Inn Fields, W.C.
63	1868, Jul. 13	BROWN, GEORGE	Roborough House, Barnstaple, Devonshire.
634	1881, Dec. 19	BROWN, GEORGE JAMES . . .	8, Spring Gardens, S.W.
933	1883, April 30	BROWN, JOHN POWLES . . .	21, East Street, Hereford.
173	1869, Feb. 22	BROWN, THOMAS FORSTER . .	Guildhall Chambers, Cardiff.
165	1869, Feb. 8	BROWN, WILLIAM.	Tring, Herts.
1313	1886, May 3	BROWN, WILLIAM BLUMFIELD .	5, Henrietta Street, W.C.
1291	1886, Jan. 11	BRYDON, ROBERT	The Dene, Seaham-Harbour, Durham.
246	1870, Dec. 12	BUCHAN, THOMAS.	15, Barrack Street, Dundee.
77	1868, July 13	BUCK, ALBERT	Worcester.
270	1871, Dec. 18	BUCKLAND, FRANK BOWRY . .	Windsor.
774	1882, Mar. 13	BURBRIDGE, SAMUEL. . . .	9, Blomfield Street, E.C.
1215	1884, Dec. 8	BURD, LAURENCE	Mayfield, Shrewsbury.
80	1868, Jul. 20	BURNELL, EDWARD HENRY . .	32, Bedford Row, W.C.

Dip. No.	Date of Election and of Transfer.	FELLOWS.	
635	1881, Dec. 19	BURNETT, DAVID	14, Nicholas Lane, E.C.
379	1875, Feb. 1	BURROUGHES, THOMAS HENRY.	16, Lower Berkeley Street, W., and 30, Lincoln's Inn Fields, W.C.
814	1882, May 22	BURROWS, ALFRED JOE . . .	Surrenden Estate Office, Pluckley, Kent.
1216	1884, Dec. 8	BURTENSHAW, ALBERT . . .	Hailsham, Sussex.
323	1874, Jan. 5	BUZZARD, ALFRED LINDSEY. .	22, Surrey Street, Strand W.C.
787	A. '82, Mar. 27 / F. '84, Jan. 14	CARD, HENRY CURTIS . . .	North Street, Lewes, Sussex.
232	A. '70, Feb. 7 / F. '80, Nov. 22	CARRITT, ERNEST	18 & 19, Great St. Helen's, E.C.
800	A. '82, Apr. 24 / F. '83, Jan. 15	CARPENTER, EVAN GEORGE .	2, Abchurch Yard, E.C., and 21, High Street, Croydon, Surrey.
954	1883, May 25	CARTWRIGHT, GEORGE KINGSFORD	Office of the Duchy of Lancaster, 34, De Gardens, South Kensington, S.W.
636	1881, Dec. 19	CARTWRIGHT, HENRY EDWARD .	Magherafelt Manor, Co. Londonderry, Ireland
444	1876, Apr. 24	CASSELL, JAMES ROBERT . .	11, Billiter Square, E.C.
920	1883, April 16	CASTLE, GEORGE RICHARD . .	Bicester, Oxford.
328	1874, Jan. 19	CASTLE, HENRY JAMES, SEN. (*Member of Council*) .	40, Chancery Lane, W.C.
637	1881, Dec. 19	CASTLE, HENRY JAMES, JUN. .	37, Bedford Row, W.C.
295	1873, Jan. 13	CASTLE, ROBERT	Merton Street, Oxford.
278	1872, Mar. 11	CASTLE, WILLIAM HENRY BALDWIN	40, Chancery Lane, W.C.
247	1870, Dec. 12	CATES, ARTHUR	7, Whitehall Yard, S.W.
362	1875, Jan. 4	CAVE, HENRY H.	The Manor House, Brigg, Lincolnshire.
1263	1885, Mar. 23	CHADWICK, SPENCER	17, Parliament Street, S.W.
1061	1884, Jan. 28	CHANCELLOR, ALBERT . . .	1, King Street, Richmond, Surrey.
219	1870, Jan. 10	CHANCELLOR, FREDERICK . .	Chelmsford, Essex; and 20, Finsbury Circus, E.C.
25	1868, Jun. 15	CHAPMAN, GEORGE	5, Adelaide Street, Strand, W.C.
1274	1885, Nov. 23	CHESTERTON, EDWARD . . .	22, Lower Phillimore Place, Kensington, W.
1135	1884, Apr. 21	CHESTON, CHESTER	Dashwood House, New Broad Street, E.C.
57	1868, Jul. 6	CHINNOCK, FREDERICK GEORGE	11, Waterloo Place, S.W.
681	1882, Jan. 16	CLARK, SAMUEL	8, New Cavendish Street, W.
682	1882, Jan. 16	CLARKE, ALFRED DUDLEY . .	Southwick Estate Office, Fareham, Hants.
1074	A. '84, Jan. 2 / F. '86, Jan. 11	CLARKE, HOWARD CHATFEILD .	63, Bishopsgate Street Within, E.C.
973	1883, Nov. 12	CLARKE, RICHARD	Surveyor's Office, Parish Offices, Birmingham
27	1868, Jun. 15	CLARKE, THOMAS CHATFEILD (*Member of Council*) .	63, Bishopsgate Street Within, E.C.
5	1868, Jun. 15	CLIFTON, EDWARD NORTON . . (*Past-President*)	7, East India Avenue, E.C.
1310	1886, Mar. 8	CLOUGH-TAYLOR, HORACE GEO.	Friar Lane, Leicester.
29	1868, Jun. 15	CLUTTON, HENRY	Hartswood, Reigate, Surrey.
6	1868, Jun. 15	CLUTTON, JOHN . . . . . (*Past-President*)	9, Whitehall Place, S.W.
78	A. '68, Jul. 13 / F. '75, May 10	CLUTTON, JOHN HENRY . . .	9, Whitehall Place, S.W.
61	A. '68, Jul. 6 / F. '74, Apr. 13	CLUTTON, RALPH	9, Whitehall Place, S.W.

Dip. No.	*Date of Election and of Transfer.*	FELLOWS.	
221	A. '70, Jan. 10 F. '75, Dec. 13	CLUTTON, RALPH WILLIAM . .	Hartswood, Reigate, Surrey
65	1868, Jul. 13	CLUTTON, ROBERT GEORGE . . (*Member of Council*)	9, Whitehall Place, S.W.
153	1869, Jan. 11	CLUTTON, WILLIAM JAMES . .	The Mount, York.
713	1882, Jan. 30	COBB, HERBERT MANSFIELD .	43, Lincoln's Inn Fields, W.C.
31	1868, Jun. 15	COBB, ROBERT LAKE. . . . (*Member of Council*)	Higham, Kent.
714	1882, Jan. 30	COLEMAN, JOHN	10, Museum Street, York.
769	A. '82, Feb. 27 F. '84, Jan. 28	COLGATE, THOMAS, JUN. . . .	Glynde, Lewes, Sussex.
119	1868, Aug. 17	COLLINS, HENRY HYMAN . .	61, Old Broad Street, E.C.
193	1869, Apr. 5	COMELY, JOHN GILL	Winchester, Hants.
1035	1884, Jan. 14	COOK, EDWARD SAMUEL . .	60, Queen Victoria Street, E.C
1172	1884, May 19	COOPER, ARTHUR LESLIE . .	86, High Street, Maidenhead.
715	1882, Jan. 30	COOPER, JOHN GROVES . . .	Bideford, Devon.
895	1883, Feb. 26	COOPER, JOHN THOMAS. . .	41, Moorgate Street, E.C.
445	1876, Apr. 24	COOTE, GEORGE	Smeetham Hall, Sudbury, Suffolk
985	1883, Dec. 17	COOTE, JOHN	Sudbury, Suffolk.
272	1872, Jan. 29	COUCHMAN, CHARLES. . . .	6, Waterloo Street, Birmingham.
934	1883, April 30	COUCHMAN, ROBERT EDWARD .	3, Bennett's Hill, Birmingham.
556	1880, Jan. 5	COVERDALE, FREDERICK JOHN .	Ingatestone Hall, Essex.
728	1882, Feb. 13	COVERDALE, HENRY	Cossey, Norfolk.
495	1878, Jan. 28	COWGILL, WILLIAM	Bradford.
729	1882, Feb. 13	COX, GEORGE JAMES	1, Promenade, Cheltenham.
159	1869, Jan. 25	CRAWTER, JOHN	Cheshunt, Herts.
160	1869, Jan. 25	CRICKMAY, GEORGE RACKSTROW.	17, Parliament Street, S.W., and St. Thomas Street, Weymouth.
730	1882, Feb. 13	CRONK, EDWYN EVANS . . .	12, Pall Mall, S.W.
731	1882, Feb. 13	CRONK, FRANK	12, Pall Mall, S.W.
871	1883, Jan. 29	CRONK, WILLIAM HENRY . .	Sevenoaks, Kent.
416	1876, Jan. 10	CROSS, JOHN	77, King Street, Manchester.
307	1873, Apr. 21	CROSS, WILLIAM STEPHENS . .	18, Outer Temple, and 2, Cecil Street, Strand, W.C.
389	A. '75, Mar. 1 F. '80, Nov. 8	CRUSE, EDMUND	34, High Street, Warminster, Wiltshire.
32	1868, Jun. 15	CURREY, HENRY	37, Norfolk Street, W.C.
581	1880, Dec. 13	CURTIS, CHARLES EDWARD . .	Deanyers, Alton, Hants.
483	1877, Apr. 16	CURTIS, ROBERT LEABON . .	119 and 120, London Wall, E.C.
543	1879, Apr. 28	CURTIS, SAMUEL PERKINS . .	119 and 120, London Wall, E.C.
986	1883, Dec. 17	DAINTREE, JOHN OSBORN . .	Redlands, Lolworth-by-St. Ives, Hunts.
387	A. '75, Feb. 15 F. '84, Jan. 14	DALE, JOHN	16, Whitehall Place, S.W.
638	1881, Dec. 19	DALLAS, EDWIN STUART . . .	34, Great James Street, Bedford Row, W.C.
987	1883, Dec. 17	DANIEL, HARRY AUGUSTUS HOOD	Chasefield, Fishponds, near Bristol.
732	1882, Feb. 13	DANN, HENRY	Bexley, Kent.
510	1878, Apr. 29	DARLEY, WILLIAM	Eastfield, Askern, Doncaster.

Dip. No.	*Date of Election and of Transfer.*	FELLOWS.	
896	1883, Feb. 26	DASH, THOMAS ALEXIS . . .	12, Whitehall Place, S.W.
300	1873, Feb. 10	DAVIES, JOHN MORGAN . . .	Froodvale, Llandilo, Carmarthenshire.
491	A. '77, Dec. 10 F. '81, Nov. 14	DAVIS, JAMES	32, Strand, W.C.
897	1883, Feb. 26	DAW, WILLIAM HERBERT . .	62, Coleman Street, E.C.
683	1882, Jan. 16	DEACON, THOMAS MARK. . .	1, Adelaide Street, Charing Cross, S.W.
1085	1884, Feb. 11	DEBENHAM, THOMAS NUNN . .	80, Cheapside, E.C.
1116	1884, Mar. 10	DENNANT, WILLIAM FREETH .	63, Queen Victoria Street, E.C.
863	1883, Jan. 15	DENT, RALPH JOHN . . .	Streatlam House, Darlington.
8	1868, Jun. 15	DENTON, JOHN BAILEY . . .	Palace Chambers, 9, Bridge Street, S.W.
759	1882, Feb. 27	DEW, WILLIAM ARTHUR . . .	Wellfield House, Bangor.
1228	A. '84, Dec. 8 F. '85, May 18	*DICKSON, THOMAS ARTHUR . .	West Cliff, Preston, Lancashire
884	1883, Feb. 12	DINWIDDY, THOMAS	Croom's Hill, Greenwich Park.
169	A. '69, Feb. 8 F. '78, Feb. 25	DODGSON, WILFRED LONGLEY .	The Moor, Ludlow.
1136	1884, Apr. 21	DOLL, CHARLES FITZROY . .	74, Gower Street, Bedford Square, W.C.
1250	1885, Feb. 9	DONNE, HENRY	Leek Wootten, Warwick.
163	A. '69, Jan. 25 F. '82, Nov. 31	DOWDEN, HENRY JOSEPH . .	6, Spring Gardens, S.W.
716	1882, Jan. 30	DOWLING, CLEMENT	32, Craven Street, W.C.
493	1878, Jan. 14	DOWNING, FREDERICK . . .	7A, Whitehall Yard, S.W.
817	A. '82, May 22 F. '84, May 19	DRAPER, ARTHUR THOMAS . .	Grey Friars, Leicester.
301	1873, Feb. 10	DREW, HENRY	Exeter.
275	1872, Feb. 26	DREW, JOHN	9, Queen Street, Exeter; and Powderham Castle near Exeter.
913	1883, April 2	DREWITT, GEORGE	94, High Street, Guildford.
419	A. '76, Jan. 10 F. '78, Feb. 25	DRIVER, CHARLES WILLIAM .	4, Whitehall, S.W.
9	1868, Jun. 15	DRIVER, ROBERT COLLIER . . *(Vice-President)*	4, Whitehall, S.W.
582	1880, Dec. 13	DRIVER, ROBERT MANNING . .	4, Whitehall, S.W.
684	1882, Jan. 16	DRURY, EDWARD DRU . . .	25, Queen Anne's Gate, S.W.
324	1874, Jan. 5	DUNCH, CHARLES.	St. Clement's House, St. Clement's Lane, E.C.
252	1871, Jan. 30	DUNLOP, ALEXANDER MILNE . *(Member of Council)*	3, Old Palace Yard, S.W.
792	1882, Apr. 24	DYER, WILLIAM JOHN . . .	Montpelier Row, Blackheath. S.E.
35	1868, Jun. 15	DYMOND, FRANCIS WILLIAMS .	Exeter.
1251	1885, Feb. 9	EADE, ARTHUR WILLOUGHBY FRENCH	Feethams, Darlington.
864	1883, Jan. 15	EALES, FREDERICK ERNEST .	9, Welbeck Street, W.
1210	1884, Nov. 10	EDWARDES, CHARLES BIDWELL .	The Precincts, Peterborough.
639	1881, Dec. 19	EGERTON, HUBERT DECIMUS .	8, New Road, Oxford.
988	1883, Dec. 17	EGGAR, JAMES ALFRED . . .	9, West Street, Farnham, Surrey.
1173	1884, May 19	EGGINTON, JOHN	150, Friar Street, Reading.
530	A. 1879, Jan. 20 F. 1883, Dec. 3	EILOART, FREDERICK EDWARD .	40, Chancery Lane, W.C.

Dip. No.	Date of Election and of Transfer.	FELLOWS.	
1036	1884, Jan. 14	ELLIOTT, CHARLES	The Fawns, Ermington, Ivy Bridge, Devon.
830	1882, Dec. 18	ELLIS, HENRY	62, Chancery Lane, W.C.
885	1883, Feb. 12	ELLIS, RICHARD ADAM . . .	49, Fenchurch Street, E.C.
380	1875, Feb. 1	ELLIS, SIR JOHN WHITTAKER, BART., M.P.	29, Fleet Street, E.C., and 18, Old Broad Street, E.C.
276	1872, Feb. 26	EMMANUEL, BARROW	2, Finsbury Circus, E.C.
898	1883, Feb. 26	EVANS, ROBERT	Eldin Chambers, Wheeler Gate, Nottingham.
338	A. 1874, Feb. 16 F. 1876, Nov. 27	EVANS, WILLIAM ERNEST . .	School Gardens, Shrewsbury.
685	1882, Jan. 16	EVE, JOHN RICHARD	St. Paul's Square, Bedford, Bedfordshire.
104	1868, Aug. 3	EVE, WILLIAM	10, Union Court, Old Broad Street, E.C.
311	1873, May 5	EVES, GEORGE	Uxbridge, Middlesex.
557	1880, Jan. 5	FAIR, JACOB WILSON . . .	Haigh Hall, Wigan, and 8, Winckley Street, Preston.
1174	1884, May 19	FAIR, THOMAS	Estate Offices, Lytham, Lancashire.
1062	1884, Jan. 28	FARMER, EDMUND	80, Cheapside, E.C.
540	1879, Mar. 31	FARRAR, JAMES	12, Market Street, Bury, Lancashire.
1321	1886, May 17	FAWKES, ALGERNON	Sudbury, Derby.
1037	1884, Jan. 14	FAYERMAN, GEORGE METCALFE	88, The Parade, Leamington, Warwickshire.
886	1883, Feb. 12	FELTON, GEORGE FREDERICK .	6, Church Walks, Llandudno.
974	1883, Nov. 12	FERRIS, GEORGE	Milton Manor, Pewsey, Wilts.
831	1882, Dec. 18	FIDDIAN, WILLIAM	98, High Street, Stourbridge.
297	1873, Jan. 27	FIELD, FRANCIS HAYWARD . .	Merton Street, Oxford.
872	1883, Jan. 29	FIELD, JAMES FREDERICK . .	57, Borough High Street, S.E.
1322	1886, May 17	FIELD, WALTER WILLIAM . .	57, Borough High Street, S.E.
1038	1884, Jan. 14	FLEETWOOD, GEORGE . . .	15, Furnival's Inn, E.C.
562	1880, Jan. 19	FLOCKTON, THOMAS JAMES . .	15, St. James' Row, Sheffield.
640	1881, Dec. 19	FORREST, ROBERT	Windsor Estate Office, St. Fagans, near Cardiff.
551	1879, Dec. 8	FORSHAW, EDWARD	Basford, Stoke-upon-Trent.
1039	1884, Jan. 14	FOSBERY, WILLIAM THOMAS EXHAM	Warwick.
279	1872, Mar. 11	FOSTER, CHARLES ROLLS . .	54, Pall Mall, S.W.
641	1881, Dec. 19	FOSTER, JOSEPH BURGESS . .	4, Cambridge Street, Plymouth, Devon.
687	1882, Jan. 16	FOULKES, SEPTIMUS GIFFORD .	Tring, Herts.
686	1882, Jan. 16	FOWLER, FREDERICK. . . .	St. James' Street, Sheffield.
832	1882, Dec. 18	FOWLER, HENRY.	95, Colmore Row, Birmingham.
316	1873, Dec. 8	FOWLER, WILLIAM . . . . (*Member of Council.*)	95, Colmore Row, Birmingham.
921	1883, April 16	FRANKLIN, THOMAS	Ascot, near Wallingford.
922	1883, April 16	FRANKLIN, WILLIAM TAYLOR .	Ascot, near Wallingford.
1217	1884, Dec. 8	FREUER, WILLIAM	West Rudham, Swaffham, Norfolk.
734	1882, Feb. 13	FRYER, GEORGE	17, Parliament Street, Hull, and Rose Villa, Bishop Wilton, near York.

Dip. No.	*Date of Election and of Transfer.*	FELLOWS.	
369	1875, Jan. 18	FRY, GEORGE FREDERICK . .	46, London Road, Dover, Kent.
1063	1884, Jan. 28	FULLER, ERNEST	98, Wimpole Street, W.
36	1868, Jun. 15	FULLER, FRANCIS.	63, St. Aubyn's Place, Cliftonville, Hove, Brigh
1040	1884, Jan. 14	FULLER, HARRY	37, High Street, Croydon.
775	1882, Mar. 13	FURBER, HERBERT	2, Warwick Court, Gray's Inn, W.C.
1064	1884, Jan. 28	FURBER, WILLIAM	2, Warwick Court, Gray's Inn, W.C.
417	1876, Jan. 10	GAIRDNER, EDWARD JAMES . .	27, Southampton Buildings, W.C.
761	1882, Feb. 27	GALE, JOSEPH JOHN	Market Place, Wallingford, Berks.
819	1882, Nov. 13	GALPIN, CHARLES ALEXANDER .	26, Cornmarket Street, Oxford.
820	1882, Nov. 13	GALPIN, JOHN	26, Cornmarket Street, Oxford.
55	1868, Jul. 6	GALSWORTHY, FREDERICK THOMAS	11, Waterloo Place, S.W.
735	1882, Feb. 13	GARDINER, EDWARD JAMES . .	110, Great Russell Street, W.C.
127	1868, Sep. 28	GARDINER, WILLIAM JAMES . .	110, Great Russell Street, W.C.
98	A. 1868, Jul. 27 F. 1883, Nov. 12	GARRARD, ARTHUR	66, Cannon Street, E.C.
688	1882, Jan. 16	GATER, CALEB WILLIAM . .	Salisbury, Wilts.
935	1883, April 30	GERMAN, GEORGE	Ashby-de-la-Zouch, Leicestershire.
887	1883, Feb. 12	GERMAN, JOHN	Ashby-de-la-Zouch, Leicestershire.
381	1875, Feb. 1	GILBERT, WILLIAM HENRY SAINSBURY	9, Old Jewry, E.C.
569	1880, Feb. 2	GILLART, RICHARD	Machynlleth, Montgomeryshire.
213	1869, Dec. 6	GIRDWOOD, JAMES	18, Adam Street, Adelphi, W.C.
420	1876, Jan. 24	GLASIER, GEORGE HENRY BROUGHAM	6, Spring Gardens, S.W.
1286	A. '85, Dec. 7 F. '86, May 17	*GODFREY, ROBERT	Valentine Road, King's Heath, near Birmingha
989	1883, Dec. 17	GOODCHILD, JOSIAH	81, Finsbury Pavement, E.C.
314	A. '73, May 19 F. '78, Mar. 11	GORE, SPENCER W.	16, Whitehall Place, S.W.
478	A. '77, Feb. 12 F. '82, Dec. 18	GOTTO, FREDERICK EDWARD .	Stony Stratford, Bucks.
578	1880, Apr. 12	GOULDING, WILLIAM PURDHAM.	41, Moorgate Street, E.C.
370	1875, Jan. 18	GRAHAM, WILLIAM	Victoria Chambers, Newport, Monmouthshire
1218	1884, Dec. 8	GRAIN, ARTHUR TRESS . . .	2, St. Andrew's Hill, Cambridge.
827	A. '82, Dec. 4 F. '85, Jan. 12	GRANT, JAMES	Dol-llys Cottage, Llanidloes, Montgomeryshire
899	1883, Feb. 26	GRATTON, JOHN STERLAND . .	Midland Railway Station, Derby.
1260	1885, Mar. 9	GRAVES, WALTER.	Mansion House Chambers, 11, Queen Victo Street, E.C.
1086	1884, Feb. 11	GREAVES, JOHN	Penistone, near Sheffield.
690	1882, Jan. 16	GREEN, JAMES	22, Chancery Lane, W.C.
1188	1884, May 26	GREEN, SAMUEL	28 and 29, St. Swithin's Lane, E.C.
1087	1884, Feb. 11	GRELLIER, HARLEY MAIR . .	17, Abchurch Lane, E.C.
371	1875, Jan. 18	GREY, CHARLES GREY . . .	55, Parliament Street, S.W.
433	1876, Mar. 20	GWYTHER, WILLIAM WARLOW .	43, Lincoln's Inn Fields, W.C.

Dip. No.	Date of Election and of Transfer.	FELLOWS.	
347	1874, Mar. 16	HADDOCK, ROLAND	2, Abchurch Yard, E.C., and 21, High Street, Croydon, Surrey.
619	1881, May 2	HALL, ERNEST	166, Queen Street, Portsea, Hants.
517	1878, Dec. 9	HALL, JOHN GEORGE	1, Masbro' Road, West Kensington, W.
923	1883, April 16	HALL, WALTER	38, Chancery Lane, W.C.
1189	1884, May 26	HALLETT, WILLIAM BROWN	278, Holloway Road, N.
691	1882, Jan. 16	HAMILTON, HENRY	64 & 65, Coleman Street, E.C.
1240	1885, Jan. 12	HANNEN, REGINALD ST. JOHN	Fordingbridge, Salisbury.
1245	1885, Jan. 26	HANSON, AMOS	35, Church Street, St. Helen's, Lancashire.
642	1881, Dec. 19	HARDCASTLE, FREDERICK HENRY APPLETON	34, Southampton Street, Strand, W.C.
481	A. '77, Mar. 26 / F. '82, Dec. 18	HARDING, EDWARD ERNEST	16, St. Paul's Churchyard, E.C.
363	1875, Jan. 4	HARDING, JOSEPH	49, Lune Street, Preston.
643	1881, Dec. 19	HARDING, SIDNEY LONGHURST	St. Albans, Herts.
482	A. '77, Mar. 26 / F. '82, Dec. 18	HARDING, WILLIAM DANIEL,	16, St. Paul's Churchyard, E.C.
1175	1884, May 19	HARMAN, JAMES AMBROSE	75, Aldermanbury, E.C.
496	A. 1878, Jan. 28 / F. 1883, Nov. 12	HARRINGTON, GEORGE FREDERICK	16, Abchurch Lane, E.C.
990	1883, Dec. 17	HARRIS, JAMES	Winchester, Hants.
263	1871, Feb. 27	HART, WILLIAM FREDERICK	Lambeth Waterworks, Brixton Hill, S.W.
312	1873, May 19	HASLAM, DRYLAND	17, Friar Street, Reading.
644	1881, Dec. 19	HAYWARD, HENRY	Dover, Kent.
253	1885, Feb. 23	HAYWOOD, HENRY	9, West Street, Hereford.
54	1868, Jul. 6	HAYWOOD, WILLIAM, LIEUT.-COLONEL	Guildhall, E.C.
254	1885, Feb. 23	HAYWOOD, WILLIAM MATTHEWS	9, West Street, Hereford.
883	1882, Dec. 1	HEARD, HERBERT	Shepton Mallet, Somerset.
692	1882, Jan. 16	HEATON, GEORGE HERBERT	Endon, near Stoke-upon-Trent, Staffordshire.
617	1881, Apr. 4	HEBBLETHWAITE, LOUIS	Conservancy Buildings, Hull.
088	1884, Feb. 11	HEDLEY, ROBERT WILKIN	31A, Colmore Row, Birmingham.
250	1871, Jan. 15	HEDLEY, THOMAS FENWICK	Sunderland.
620	1881, May 2	HEDLEY, THOMAS FENWICK, JUN.	Sunderland.
219	1884, Dec. 8	HERBERT, ALLAN	The Market Place, Andover, Hants.
991	1883, Dec. 17	HERON, WILLIAM CHARLES	Uxbridge, Middlesex.
065	1884, Jan. 28	HIGGINS, FREDERIC	Alford, Lincolnshire.
311	1886, Mar. 22	HILL, WILLIAM BURROUGH	2, Albion Place, Southampton, Hants.
220	1870, Jan. 10	HILLIARD, GEORGE BRIDGE	Chelmsford, Essex.
371	A. 1881, Dec. 19 / F. 1883, Nov. 12	HINE, GEORGE ERNEST	5, Waterloo Place, S.W.
900	1883, Feb. 26	HINE, GEORGE THOMAS	Victoria Street, Nottingham.
70	1868, Jul. 18	HIPPISLEY, EDWIN	Chamberlain Street, Wells, Somersetshire.
815	1882, May 22	HITCHCOX, WILLIAM	Victoria Chambers, Newport, Monmouthshire.
518	1878, Dec. 9	HOBGEN, FRANCIS NEALE	East Street, Chichester.
88	1883, Feb. 12	HOBSON, FREDERICK WILLIAM	20, Coleman Street, E.C.
19	1878, Dec. 9	HODSON, GEORGE	Town Hall, Loughborough.

Dip. No.	Date of Election and of Transfer.	FELLOWS.	
793	1882, Apr. 24	HOLBECHE, ROBERT NEVILLE .	21, Bennett's Hill, Birmingham.
357	1874, Nov. 16	HOLDEN, JOHN	64, Cross Street, Manchester.
1155	1884, May 5	HOLIDAY, FREDERICK DEAN .	Bicester, Oxfordshire.
1272	1885, Nov. 9	HOLME, JOHN	Owlet Ash, Milnthorpe, Westmoreland.
693	1882, Jan. 16	HOLMES, JAMES	23, Delamere Street, Ashton-under-Lyne.
794	1882, Apr. 24	*HORNE, WILLIAM EDGAR . .	84, Basinghall Street, E.C., and 17, Great Geo Street, S.W.
1275	1885, Dec. 7	HORSEY, FREDERICK . . .	11, Billiter Square, E.C.
11	1868, Jun. 15	HORSEY, THOMAS	11, Billiter Square, E.C.
174	1869, Feb. 22	HORSFALL, RICHARD	Halifax, Yorkshire.
645	1881, Dec. 19	HOVENDEN, THOMAS HENRY .	181, Bishopsgate Street Without.
171	A. '69, Feb. 8 / F. '83, Mar. 12	HUBBERSTY, HENRY ALFRED .	Buxton, Derbyshire.
936	1883, Apr. 30	HUDSON, ARTHUR BYRNE . .	19, Bennet's Hill, E.C.
1118	1884, Mar. 10	HUDSON, JAMES	Lowther, Penrith, Cumberland.
128	1868, Sep. 28	HUDSON, WILLIAM	Hope Lodge, 181, Grove Lane, Camberwell, 19, Bennet's Hill, E.C.
776	1882, Mar. 13	HULL, CHARLES	Euston Station, London, N.W.
175	1869, Feb. 22	HUMPHREYS, CHARLES . . .	6, Crosby Square, Bishopsgate Street Within,
627	1881, Dec. 5	HUMPHREYS, HENRY . . .	Woodhouse, Loughborough, Leicestershire.
12	1868, Jun. 15	HUNT, SIR HENRY ARTHUR, C.B.	45, Parliament Street, S.W.
353	1874, May 11	HUNT, HENRY ARTHUR, JUN. .	45, Parliament Street, S.W.
181	1869, Mar. 8	HUNT, JOSIAH	6, Queen Anne's Gate, S.W.
13	1868, Jun. 15	HUSKINSON, THOMAS . . . (*Past-President*)	Epperstone, Nottingham.
326	1874, Jan. 19	HUSKINSON, WILLIAM LAMBE .	The Manor House, Epperstone, Nottingham.
1220	1884, Dec. 8	HUSSEY, FRANK TOOZE . . .	The Grove, Cheddon Fitzpaine, Taunton, Some
37	1868, Jun. 15	I'ANSON, EDWARD . . . . (*Past-President*)	7A, Laurence Pountney Hill, E.C.
563	1880, Jan. 19	I'ANSON, EDWARD BLAKEWAY .	7A, Laurence Pountney Hill, E.C.
1137	1884, Apr. 21	INGE, CHARLES HENRY . . .	Broom Leasoe, Whittington, Lichfield.
305	A. '73, Feb. 10 / F. '82, Jan. 16	INGRAM, WALTER FIELDE . .	Firle, Lewes, Sussex.
884	1882, Dec. 18	INMAN, MARSHALL NISBET . .	7, Bedford Row, W.C.
885	1882, Dec. 18	INNOCENT, CHARLES JOHN . .	Sheffield.
570	1880, Feb. 16	JACKSON, CHARLES	25, Brazennose Street, Manchester.
209	1869, Jul. 26	JACKSON, FREDERICK. . . .	Nottingham.
1302	1886, Jan. 25	JEANS, MARK.	Marlborough, Wilts.
736	1882, Feb. 13	JENKINSON, WILLIAM WILBERFORCE	6, Moorgate Street, E.C.
992	1883, Dec. 17	JEUDWINE, WILLIAM WYNNE .	Chesterfield.
963	A. '83, May 25 / F. '85, Jan. 26	*JOHNSON, HENRY	37, Walbrook, E.C.
195	A. '69, Apr. 5 / F. '78, Feb. 25	JONAS, HENRY	4, Whitehall, S.W.

ip. o.	*Date of Election and of Transfer.*	FELLOWS,	
95	1868, Jul. 27	JONAS, JOHN CARTER	27, Market Hill, Cambridge.
65	1885, Apr. 20	JONES, CHARLES	Normanhurst, Ealing.
77	1882, Mar. 13	JONES, CHARLES FREDERICK	Eldon Chambers, 30, Fleet Street, E.C.
94	1882, Jan. 16	JONES, CHARLES JENKIN	25, Queen Anne's Gate, S.W.
08	1873, Apr. 21	JONES, HENRY PARR	Portway House, Warminster.
46	1881, Dec. 19	JONES, JAMES WILLIAM	54, Caledonian Road, Leeds.
06	1884, Feb. 25	JOYCE, JOHN HALL	Blackfordly, near Burton-on-Trent.
93	1883, Dec. 17	JURD, WILLIAM	10, Oxford Street, Southampton
90	1884, May 26	KEDGLEY, CHARLES	Hibernia Chambers, London Bridge, S.E.
95	1882, Jan. 16	KEELING, BASSETT	2, Tokenhouse Buildings, Lothbury, E.C.
80	1880, Nov. 8	KEIRLE, ROBERT	111, Victoria Street, S.W.
75	1883, Nov. 12	KEMSLEY, JOSEPH WILLIAM	Woodford, Essex.
91	1884, May 26	KENT, GEORGE EDWARD	Glendore, Clarendon Road, Southsea, Hants.
73	1883, Jan. 29	KING, FRANK HULME	Horsham, Sussex.
92	1884, May 26	KING, HENRY	Stourbridge, Worcestershire.
93	1884, May 26	KING, THOMAS	Pembroke House, Portsmouth, Hants.
91	1869, Mar. 22	KING, WILLIAM DAVID	Lynwood, Waverley Road, Southsea, Hants.
08	1882, May 8	KINGSTON, SAMUEL	Spalding, Lincoln.
29	1868, Sep. 28	KNOLLYS, JAMES EDWARD	Fitzhead Court, Taunton, Somerset.
64	1871, Feb. 27	KNOWLES, WILLIAM	Albion Chambers, King Street, Gloucester.
07	1868, Aug. 3	LAMBERT, WILLIAM	1, New Broad Street, E.C.
46	1876, Apr. 24	LANE, CECIL NEWTON	Whiston Hall, Shifnal, Salop.
52	1882, Feb. 27	LANGRIDGE, GEORGE	Public Rooms, Tunbridge Wells, Kent.
00	1881, Jan. 24	LANSDOWN, GEORGE	5 & 7, Warwick Street, Charing Cross, S.W.
15	1868, Nov. 9	LAURANCE, JOHN	Sexton Barns, Peterboro'.
39	1884, Feb. 11	LAW, EDMUND	29, Abington Street, Northampton.
13	1878, Nov. 11	LEANE, GEORGE HENRY	21, Queen Anne's Gate, S.W.
50	A. '68, July 6 / F. '82, May 8	LEE, CHARLES WILLIAMS	8, Adelphi Terrace, W.C.
32	1874, Feb. 2	LEE, FREDERICK	6, Great College Street, S.W.
00	1884, Feb. 11	LEE, WILLIAM	143½, High Street, Guildford, Surrey.
29	1870, Feb. 7	LEES, JOHN	Reigate, Surrey.
36	1882, Dec. 18	LEMON, JAMES	Southampton.
17	1882, Jan. 30	LEPPER, JOHN HARRAGE	Town Hall, Bromley, Kent.
98	A. '73, Jan. 27 / F. '82, Apr. 24	LERMIT, ALFRED WILLIAM	Singapore, Straits Settlements.
56	1884, May 5	LE ROSSIGNOL, FRANCIS	1, Gresham Buildings, Basinghall Street, E.C.
76	1884, May 19	LETHBRIDGE, WALTER	1, Leigham Villas, Plymouth.
33	1882, Feb. 27	LEWIS, FRANCIS THEODORE	95, Gresham Street, E.C.
47	1881, Dec. 19	LIGHTFOOT, FRANCIS LOWRY	3, Old Palace Yard, S.W.
01	1883, Feb. 26	LIGHTFOOT, HENRY LE BLANC	Lower Lawn, Tisbury, Salisbury.
37	1882, Feb. 13	LITTLE, WILLIAM CUTLACK	Stag's Holt, March, Cambridgeshire.

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648	1881, Dec. 19	LOCK, WILLIAM HENRY . . .	Instow, North Devon.
393	1875, Mar. 15	LOFTS, HENRY	130, Mount Street, Grosvenor Square, W.
1221	1884, Dec. 8	LONG, EDWARD WALTER . .	2, St. Andrew's Hill, Cambridge.
1138	1884, Apr. 21	LOOKER, JOHN	High Street, Huntingdon.
424	1876, Feb. 7	LOVEJOY, ALFRED	35, Bucklersbury, E.C.
738	1882, Feb. 13	LOWE, CHARLES HARLOWE . .	Hampstead Vestry Hall, Haverstock Hill, N.
205	1869, Jul. 12	LYE, JOHN GAUNT	8, Lancaster Place, W.C.
425	1876, Feb. 7	MCCALL, GEORGE	33, Victoria Chambers, Market Place, Blackburn
161	1869, Jan. 25	MANN, CHARLES JOHN . . .	29, Great George Street, S.W.
373	1875, Jan. 18	MANN, ROBERT WILKS . . .	12, Lower Grosvenor Place, S.W.
192	1869, Mar. 22	MARR, JAMES	8, Adam Street, Adelphi, W.C.
626	A. '81, Nov. 14 / F. '84, Nov. 24	MARSHALL, LIONEL HASLER .	Chippenham, Wilts.
976	1883, Nov. 12	MARTIN, GEORGE DENNIS . .	124-127, Mansion House Chambers, E.C.
434	1876, Mar. 20	MARTIN, GILSON	Chatsworth, Chesterfield.
1222	1884, Dec. 8	MARTIN, HENRY OSBORNE . .	7, Adam Street, Adelphi, W.C.
364	1875, Jan. 4	MARTIN, HOWARD	27, Chancery Lane, W.C., and Bolney Grange, Havelock Road, Croydon.
230	1870, Feb. 7	MARTIN, JAMES . . . . . *(Member of Council)*	Wainfleet, Lincolnshire.
451	1876, May 8	MARTIN, JOHN MAY	Castle Chambers, Exeter.
704	A. '82, Jan. 16 / F. '84, Jan. 28	MARTIN, WALTER	Wainfleet, Lincolnshire.
1091	1884, Feb. 11	MASON, WILLIAM ARTHUR . .	31A, Colmore Row, Birmingham.
403	1875, May 10	MASON, WILLIAM LUDLAM . .	The High Holme, Louth, Lincolnshire
696	1882, Jan. 16	MASTERMAN, GEORGE HUGHES .	37, Walbrook, E.C.
994	1883, Dec. 17	MATHEWS, GEORGE SPENCER .	15, Waterloo Street, Birmingham.
995	1883, Dec. 17	MATHEWS, JOSEPH DOUGLAS .	11, Dowgate Hill, E.C.
39	1868, Jun. 15	MATHEWS, WILLIAM	15, Waterloo Street, Birmingham.
1066	1884, Jan. 28	MATTHEWS, WILLIAM . . .	8, Delahay Street, S.W.
718	1882, Jan. 30	MAYLARD, CHARLES GRASON .	21, King William Street, Strand, W.C.
837	1882, Dec. 18	MAYNARD, EDWARD	College Chambers, The Green, Richmond, Surrey
552	1879, Dec. 8	MELLERSH, ALFRED WILLIAM .	Godalming, Surrey.
764	1882, Feb. 27	MESSENGER, WILLIAM HARRY .	Hullbrook, Guildford, Surrey.
1223	1884, Dec. 8	*MICHELMORE, ALFRED . . .	Berry House, Totnes, Devon.
697	1882, Jan. 16	MILLAR, CHARLES WILLIAM . .	14, Grafton Street, W.
1177	1884, May 19	MILLS, SAMUEL MEALING . .	Orford Hill, Norwich.
1305	1886, Feb. 22	MILLS, WILLIAM EDWARD . .	49, Hamilton Square, Birkenhead.
477	1877, Feb. 12	MINTER, WILLIAM	81, Bondgate, Darlington.
1194	1884, May 26	MONIER-WILLIAMS, STANLEY FAITHFULL	18 & 19, Gt. St. Helen's, E.C.
1119	1884 Mar. 10	MORRIS, HERBERT	Lewes, Sussex.
456	1876, Nov. 13	MORRIS, JOHN WARRINGTON .	Gracechurch Buildings, Gracechurch Street
607	1881, Feb. 7	MORTIMER, JOHN CAMDEN . .	5, Great Queen Street, S.W.

Dip. No.	Date of Election and of Transfer.	FELLOWS.	
778	1882, Mar. 13	MULLETT, FREDERICK AUGUSTUS	Albion House, Hyde Park Square, W.
765	1882, Feb. 27	MUNRO, PHILIP	Bank Chambers, Corn Street, Bristol.
520	1878, Dec. 9	MURPHY, EDMUND	Dunfanaghy, Letterkenny, Ireland.
996	1883, Dec. 17	MURRAY, ROBERT LITTLE . .	15, Cheapside, Bradford.
809	1882, May 8	MYNORS, WALTER CHARLES TOWERS	Little Ingestre, Stafford.
164	A. '69, Jan. 25 / F. '82, Mar. 13	NASH, ALFRED JAMES . . .	Farnham, Surrey.
349	1874, Apr. 13	NAYLOR, ARTHUR MILLINGTON .	3, Old Palace Yard, S.W.
139	1868, Nov. 2	NEALE, CHARLES JAMES . .	High Oakham, Mansfield, Notts.
531	1879, Feb. 3	NEAME, FREDERICK, JUN. . .	Macknade, Faversham, Kent.
795	1882, Apr. 24	NEATE, ARTHUR WEBB . . .	Hungerford, and Market Place, Newbury, Berks.
1314	1886, May 3	NEVE, HERBERT	Pullington, Benenden, Staplehurst, Kent.
414	A. '75, Dec. 13 / F. '82, Feb. 27	NEVILE, HENRY WILLIAM . .	Broughton Estate Office, 8, John Dalton Street, Manchester.
1276	1885, Dec 7	NEWMAN, ARTHUR HARRISON .	19A, Tooley Street, London Bridge.
289	1872, Dec. 9	NEWMAN, FRANCIS	Ryde, Isle of Wight.
566	A. '80, Jan. 19 / F. '86, Apl. 12	NEWMARCH, HENRY CHARLES .	35, Lincoln's Inn Fields, W.C.
1041	1884, Jan. 14	NEWSAM, SAMUEL WATERHOUSE	13, Bond Street, Leeds.
739	1882, Feb. 13	NEWSON, HARRY CARSS . . .	57, Lincoln's Inn Fields, W.C.
374	1875, Jan. 18	NICHOLS, DANIEL CUBITT . .	3, Howard Street, Strand, W.C.
1211	1884, Nov. 10	NIXON, THOMAS	12, Dartmouth Street, S.W.
401	1875, Apr. 26	NOCKOLDS, MARTIN	Saffron Walden, Essex.
1264	1885, Mar. 23	NOEL, BYRON BRUCE . . .	East Horsley, Leatherhead.
435	1876, Mar. 20	NORMAN, JAMES MAURICE . .	Uxbridge, Middlesex.
182	1869, Mar. 8	NORMAN, WILLIAM	8, Spring Gardens, S.W.
85	1868, Jul. 20	NORTH, GEORGE	Palace Chambers, 9, Bridge Street, S.W.
958	1883, May 25	*NORTH, GEORGE FREDERIC . .	Wroxton Estate Office, near Banbury, Oxon.
255	1871, Feb. 13	NOTLEY, RICHARD ALBERT . .	80, Cornhill, E.C.
698	1882, Jan. 16	NOTLEY, ROBERT PLEDGE . .	35, Bucklersbury, E.C.
59	1868, Jul. 6	OAKLEY, CHRISTOPHER . . . *(Member of Council)*	10, Waterloo Place, S.W.
486	1877, Apr. 30	OAKLEY, WILLIAM	10, Waterloo Place, S.W.
650	1881, Dec. 19	OBORNE, ALFRED WILLIAM . .	9, Moorgate Street, E.C., and Wimbledon Park, Surrey.
1306	1886, Feb. 22	ORGILL, JOHN BERWICK . .	21, Hart Street, Bloomsbury Square, W.C.
740	1882, Feb. 13	OSBORN, RICHARD	153, Fenchurch Street, E.C.
183	1869, Mar. 8	OWEN, THOMAS RULE . . .	High Street, Haverfordwest, Pembrokeshire.
1042	1884, Jan. 14	PAGE, ROBERT	9, Denman Street, London Bridge, S.E.
406	A. '75, Nov. 8 / F. '81, April 4	PAIN, COARD SQUAREY . . .	14, North John Street, Liverpool, and 5, Victoria Street, Westminster, S.W.

Dip. No.	Date of Election and of Transfer.	FELLOWS.	
838	1882, Dec. 18	PALMER, ALFRED	8, Lancaster Place, W.C.
1315	1886, May 3	PARK, WILLIAM PHILIP . . .	22, Guildhall Street, Preston, Lancashire.
1269	1885, May 18	PARKER, JOHN	Mansion House, Hereford.
628	A. '81, Dec. 5 / F. '84, Nov. 24	PARKIN, JOHN ROBERT . . .	Idridgehay, near Derby.
865	1883, Jan. 15	PARMETER, FRANK	South View House, West Parade, Newcastle Tyne.
1195	1884, May 26	PARNELL, ROBERT	Oundle, Northamptonshire.
910	1883, Mar. 12	PARR, SAMUEL	7, Finsbury Square, E.C.
288	1872, Dec. 9	PARSONS, HENRY.	Misterton, Crewkerne, Somerset.
405	1875, Nov. 8	PATERSON, ROBERT	10, Hanover Street, Edinburgh.
601	1881, Jan. 24	PATTISSON, JACOB LUARD . .	6, Sussex Gardens, Hyde Park, W.
1157	1884, May 5	PAXTON, EDWARD HAYTON . .	Bicester, Oxfordshire.
583	1880, Dec. 13	PAYNE, ALEXANDER	4, Storey's Gate, S.W.
719	1882, Jan. 30	PAYNE, FREDERICK	Town Hall, Bromley, Kent.
1270	1885, May 18	PECK, WILLIAM ROLAND . . .	National Liberal Club, Trafalgar Square, S
889	1883, Feb. 12	PEEBLES, ALEXANDER . . .	3, Salters' Hall Court, E.C.
21	1868, Jun. 15	PENFOLD, JOHN WORNHAM . . (*Honorary Secretary*)	29, Great George Street, S.W.
452	1876, May 8	PEPPERCORN, JOHN HUTCHINSON	Manor House, Eaton Socon, St. Neots.
1252	1885, Feb. 9	*PETO, JAMES WINDER . . .	10, Market Square, Bromley, Kent.
428	1876, Feb. 21	PHILLIPS, FREDERICK HAMILTON	Glamorganshire County Roads Surveyor's Ely, near Cardiff.
1043	1884, Jan. 14	PICKERING, WILLIAM CLOVES .	Ivy House, Whitford, Holywell, N. Wales
651	1881, Dec. 19	PICKSTOCK, JOHN	Castle Hill, Winchester, Hants.
1196	1884, May 26	POLLARD, HARRY EMANS . .	14, Duke Street, Adelphi, W.C.
997	1883, Dec. 17	POPPLEWELL, WILLIAM WILLOTT	Victoria Chambers, Southampton Bui W.C.; and Imperial Chambers, Derby
699	1882, Jan. 16	PORTER, ALFRED	109, Grange Road, Bermondsey, S.E.
558	1880, Jan. 5	POTTS, JOSEPH, JUN. . . .	North Cliff, Roker, Sunderland.
224	1870, Jan. 24	POUNDLEY, JOHN EDWARD . .	Black Hall, Kerry, Montgomeryshire.
487	1877, May 14	POWELL, EVAN	Broomcliffe, Llanidloes, Montgomeryshire.
342	A. '74, Feb. 16 / F. '80, Nov. 22	POWELL, REGINALD HENRY . .	St. Swithin's Lane, High Street, Lewes, S
490	1877, Dec 10	POWNALL, GEORGE HARRY . .	29, Parliament Street, S.W.
1273	1885, Nov. 9	PUNCHARD, FREDERICK . .	Underley Estate Office, Kirkby Lonsdale, moreland.
1224	1884, Dec. 8	PYM, GEORGE EDWIN . . .	Doods, Reigate, Surrey.
796	1882, Apr. 24	RABY, JOSEPH WALKER . . .	78, Cross Street, Manchester.
625	1881, Nov. 14	RABY, WILLIAM	78, Cross Street, Manchester.
902	1883, Feb. 26	RAWLENCE, ERNEST ALFRED .	Tower House, Salisbury.
231	1870, Feb. 7	RAWLENCE, JAMES	Salisbury, Wilts.
134	1868, Oct. 26	RAYNBIRD, HUGH EDWARD . .	Basingstoke, Hants.
1139	1884, Apr. 21	READ, GEORGE HUNTLY . .	27, Albany Street, N.W.

Dip. No.	*Date of Election and of Transfer.*	FELLOWS.	
889	1882, Dec. 18	REDDALL, DAVID GADSDEN. .	10, South Street, Finsbury, E.C.
584	1880, Dec. 13	REES, WILLIAM ANDREW . .	7, Cornhill, E.C.
544	1879, Apr. 28	REES, WILLIAM GEORGE . .	Holly House, Newport, Monmouthshire.
1044	1884, Jan. 14	REEVES, BENJAMIN AUSTEN. .	27, Chancery Lane, W.C.
514	1878, Nov. 11	REID, PATRICK SANDEMAN . .	20, John Street, Adelphi, W.C.
937	1883, April 30	RENDELL, ARTHUR STEPHEN .	Homefield, Coffinswell, Newton Abbot.
172	A. '69, Feb. 8 F. '82, Feb. 13	REX, WILLIAM	36, Chancery Lane, W.C., and 311, Kentish Town Road, N.W.
453	A. '76, May 8 F. '81, Dec. 6	RICH, ROBERT . . .	Weston Birt, near Tetbury, Gloucestershire.
890	1883, Feb. 12	RICHARDS, ALFRED	8, New Broad Street, E.C.
1197	1884, May 26	RICHARDS, HENRY BRINLEY .	20, Coleman Street, E.C.
461	1876, Dec. 18	RICHARDSON, JOHN	Methley Park, Leeds.
303	1873, Feb. 10	RICKMAN, THOMAS MILLER . . (*Member of Council*)	8, Montague Street, Russell Square, W.C.
914	1883, April 2	RIDDLE, FREDERICK HENRY BRIMBLE	54, Pall Mall, S.W.
724	A. '82, Jan. 30 F. '83, Jan. 29	RIGDEN, HENRY WILLIAM . .	Salisbury, Wilts.
120	1868, Aug. 17	ROBERTS, RICHARD	42, New Broad Street, E.C.
72	1868, Jul. 13	ROBINS, EDWARD COOKWORTHY.	46, Berners Street, Oxford Street, W.
603	1881, Jan. 24	ROBINS, WILLIAM HENRY . .	82A, New Street, Birmingham.
618	1881, Apr. 4	ROBINSON, HENRY	7, Westminster Chambers, S.W.
810	1882, May 8	ROBINSON, NATHANIEL WISHART	Marlowes, Hemel Hempstead, Herts.
291	1872, Dec. 9	ROBSON, EDWARD ROBERT . .	41, Parliament Street, S.W.; and 6, St. Germain's Place, Blackheath, S.E.
602	1881, Jan. 24	ROGERS, EDWARD PHIPPARD GEORGE	16, Borough, London Bridge, S.E.
825	1882, Dec. 4	ROGERS, ERNEST EDWARD . .	1, Prince of Wales Road, Norwich.
1225	1884, Dec. 8	ROGERS, WILLIAM BENNETT .	78, Gloucester Road, South Kensington, S.W.
361	A. '74, Dec. 7 F. '76 Jan. 24	ROLLESTON, JOHN FOWKE LANCELOT	Grey Friars, Leicester.
125	1868, Aug. 31	ROSSER, WILLIAM	Llanelly, Carmarthen.
507	1878, Apr. 8	ROWE, RICHARD REYNOLDS . .	Park House, Cambridge.
315	A. '73, Dec. 8 F. '75, Nov. 8	RUSHWORTH, EDMUND WALTER	22, Savile Row, W.
1261	1885, Mar. 9	RUTHERFORD, JAMES. . . .	Kirk-leatham, Redcar, Yorkshire.
998	1883, Dec. 17	RUTLEY, CHARLES	11, Dowgate Hill, E.C.
466	A. '76, Dec. 8 F. '80, Nov. 8	RYDE, ARTHUR LYON . . .	29, Great George Street, S.W.
16	1868, Jun. 15	RYDE, EDWARD . . . . (*Past-President*)	29, Great George Street, S.W.
421	1876, Jan. 24	SADLER, GEORGE WILLIAM . .	467, High Street, Cheltenham.
256	1871, Feb. 13	ST. QUINTIN, PERRY. . . .	37, Threadneedle Street, E.C.
397	1875, Apr. 26	SANDAY, GEORGE HENRY . .	Langdale Lodge, Adkin Road, Clapham Park, S.W.
741	1882, Feb. 13	SANDERS, THOMAS	Cheltenham.
458	1876, Nov. 27	SANDY, HENRY	Newport Road, Stafford.

Dip. No.	*Date of Election and of Transfer.*	FELLOWS.	
167	1869, Feb. 8	SAUNDERS, CECIL GEORGE . .	5, Agar Street, Strand, W.C.
177	1869, Feb. 22	SAUNDERS, EDWARD	6, Bishopsgate Street Without, E.C.
121	1863, Aug. 17	SAVILL, ALFRED	39, New Broad Street, E.C.; and Chigwell, E
526	1879, Jan. 6	SCARGILL, ALFRED	11, East Parade, Sheffield.
383	1874, Feb. 2	SCARTH, WILLIAM T. . . .	Raby Castle, Darlington.
629	A. '81, Dec. 5 F. '82, Apr. 24	SCOVELL, JOHN	Batsford, Moreton-in-the-Marsh, Gloucesters
392	1875, Mar. 1	SEARLE, FRANCIS WILLIAM . .	Marsh House, Tottenham, Middlesex.
534	1879, Mar. 3	SELBY, CHARLES FREDERIC . .	19, Queen Anne's Gate, S.W.
823	A. '82, Nov. 13 F. '86, May 8	SEYMOUR, RICHARD ARTHUR HAMILTON	Preston Hall Farm, Aylesford, Kent.
390	1875, Mar. 1	SHACKEL, GEORGE	12, The Forbury, Reading, Berks.
431	1876, Mar. 6	SHAW, JOHN	College Place, Derby.
1255	1885, Feb. 23	SHELLABEAR, SAMUEL . . .	Quebec Road, East Dereham, Norfolk.
999	1883, Dec. 17	SHEPPARD, OSBORNE	Glynelydach, Neath.
653	1881, Dec. 19	SHERLOCK, CORNELIUS . . .	63, South John Street, Liverpool.
1316	1886, May 3	SHERRIN, JOHN LESTER . .	1, Basinghall Street, E.C.
474	A. '77, Jan. 29 F. '80, Nov. 8	SHOPPEE, CHARLES HERBERT .	22, John Street, Bedford Row, W.C.
74	1868, Jul. 13	SHOPPEE, CHARLES JOHN . . *(Vice-President)*	61, Doughty Street, W.C.
604	A. '81, Jan. 24 F. '83, May 21	*SILCOCK, THOMAS BALL. . .	14, Abbey Churchyard, Bath.
720	1882, Jan. 30	SIMMONDS, FREDERICK . . .	Parkside, Englefield Green, Surrey.
903	1883, Feb. 26	SIMMS, WALTER	27, Albany Street, N.W.
282	1872, Apr. 22	SLATER, GEORGE.	Canterbury.
593	A. '80, Dec. 12 F. '83 April. 30	SMALLPEICE, GEORGE BAKER .	9 and 10, Tokenhouse Yard, E.C.; and Guild
135	1868, Oct. 26	SMELLIE, THOMAS DAVIES . .	209, St. Vincent Street, Glasgow.
122	1863, Aug. 17	SMITH, CHARLES BOVILL . .	Wickham, Hants.
238	A. '70, Mar. 21 F. '78, Mar. 11	SMITH, CHARLES JOHN . .	16, Whitehall Place, S.W.
454	A. '76, May 8 F. '81, Dec. 6	SMITH, HENRY	8, John Street, Adelphi, W.C.
400	A. '75, Apr. 26 F. '81, Jan. 24	SMITH, HENRY HERBERT . .	Chippenham, Wilts. and 7, Whitehall Place,
955	1883, May 25	SMITH, JOSEPH	15, Cheapside, Bradford, Yorkshire.
1256	1885, Feb. 23	*SMITH, WILLIAM	Rushford, Evesham, Worcestershire.
708	A. '82, Jan. 16 F. '86, Mar. 8	SMITH, WILLIAM CHARLES HENRY ALSTON	15, Waterloo Street, Birmingham.
146	1868, Nov. 9	SOUTHWELL, CHARLES JOSIAH .	9, Whitehall Place, S.W.
96	1868, Jul. 27	SPACKMAN, HENRY	6, Terrace Walks, Bath.
1107	1884, Feb. 25	SPURLING, HENRY	Shotley, near Ipswich, Suffolk.
42	1868, Jun. 15	SQUAREY, ELIAS PITTS . . . *(Vice-President)*	The Moot, Downton, Salisbury; and 22, George Street, S.W.
1067	1884, Jan. 28	SQUIRE, RICHARD	2, Pont Street, Belgrave Square, S.W.
1277	1885, Dec. 7	STACEY, HARRIE	Station Road, Redhill, Surrey.
1268	1885, May 4	STAFFORD, ROBERT BARRY . .	83, High Street, Bedford.
840	1882, Dec. 18	STANGER, CALEB.	21, Finsbury Pavement, E.C.
123	1868, Aug. 17	STANLEY, HENRY	Bury St. Edmunds, Suffolk.
43	1868, Jun. 15	STATTER, THOMAS	Standhall, Whitefield, Manchester.

Dip. No.	Date of Election and of Transfer.	FELLOWS.	
469	1877, Jan. 15	STENNING, ALEXANDER ROSE .	121, Cannon Street, E.C.
529	A. '79, Jan. 6 / F. '82, Nov. 13	STEPHENSON, CHARLES WILLIAM	38, Parliament Street, S.W.
422	1876, Jan. 24	STEPHENSON, CHRISTOPHER. .	Naworth Estate Office, Brampton, Cumberland.
198	1884, May 26	STEVENS, WILLIAM CHARLES .	22, Savile Row, W.
97	1868, Jul. 27	STEWARD, HERBERT THOMAS .	45, Parliament Street, S.W.
938	1883, April 30	STOCK, HENRY	9, Denman Street, London Bridge, S.E.
654	1881, Dec. 19	STONER, ALFRED	8, Blomfield Street, E.C.
108	1884, Feb. 25	STRUDWICK, HAYWARD JAMES .	Montague Chambers, 10 & 11, Bedford Street, Strand, W.C.
655	1881, Dec. 19	STRUDWICK, WILLIAM HENRY .	14, Parliament Street, S.W.
87	1868, Jul. 20	STURGE, ROBERT FOWLER . .	34, Corn Street, Bristol.
18	1868, Jun. 15	STURGE, WILLIAM . . . . (*Past-President*)	34, Corn Street, Bristol.
278	1885, Dec. 7	SWETTENHAM, WILLIAM NORMAN	The Old School House, Shrewsbury.
257	1885, Feb. 23	SWORDER, HUGH	High Street, Epping, Essex.
068	1884, Jan. 28	SYMONS, PHILIP	Fore Street, Totnes, Devon.
1317	1886, May 3	TANNER, HENRY	H.M. Office of Works, Whitehall Place, S.W.
1092	1884, Feb. 11	TANNER, JAMES MELHUISH . .	Wembworthy, North Devon.
677	A. '81, Dec. 19 / F. '86, Jan. 25	*†TARRANT, WALTER	9, Dalberg Road, Brixton, S.W.
233	A. '70, Feb. 7 / F. '78, Jan. 28	TATHAM, GEORGE HENRY . .	23, Southampton Buildings, Chancery Lane, W.C.
1069	1884, Jan. 28	TEWSON, EDWARD	80, Cheapside, E.C.
859	A. '82, Dec. 18 / F. '85, Jan. 12	TEWSON, EDWARD ARTHUR. .	80, Cheapside, E.C.
924	1883, April 16	THEOBALD, HENRY WELLS DEWHURST	110, Great Russell Street, W.C.
329	1874, Jan. 19	THOMAS, JOSIAH	Athenæum Chambers, Nicholas Street, Bristol.
841	1882, Dec. 18	THOMPSON, ARTHUR EDWARD .	Leadenhall Buildings, E.C.
656	1881, Dec. 19	THOMPSON, EDWARD JAMES . .	The Willows, Moss Lane, Timperley, Manchester.
1000	1883, Dec. 17	THORPE, WILLIAM	Nailstone, Hinchley.
657	1881, Dec. 19	THURGOOD, HERBERT JOHN .	27, Chancery Lane, W.C.
494	1878, Jan. 14	THURSFIELD, THOMAS HOWELLS	Barrow, Brosely, Shropshire.
45	1868, Jun. 15	THYNNE, EDWARD LEWIS . .	11, Great George Street, S.W.
155	1869, Jan. 11	THYNNE, FREDERICK GEORGE .	11, Great George Street, S.W.
1070	1884, Jan. 28	THYNNE, GUY HARRY . . .	11, Great George Street, S.W.
742	1882, Feb. 13	TIFFEN, JOSEPH	Conservancy Buildings, Hull.
1241	1885, Jan. 12	TODD, WILLIAM HENRY . .	County Buildings, Hull.
376	1875, Jan. 18	TOLLEY, JAMES	66, Cannon Street, E.C.
766	1882, Feb. 27	TOOTELL, CHARLES	13, King Street, Maidstone, Kent.
472	1877, Jan. 29	TOOTELL, JOSEPH	Maidstone, Kent.
767	1882, Feb. 27	TOOTELL, JOSEPH, JUN. . . .	13, King Street, Maidstone, Kent.
473	1877, Jan. 29	TOOTELL, RICHARD WILLIAM .	11, Queen Victoria Street, E.C.

† Institution Prizeman, 1881.

Dip. No.	*Date of Election and of Transfer.*	FELLOWS.	
447	1876, Apr. 24	TOWER, BROWNLOW RICHARD CHRISTOPHER	Bridgewater Estate Office, Ellesmere, Salop
1001	1883, Dec. 17	TRETHEWY, HENRY	Silsoe, Ampthill, Beds.
1292	1886, Jan. 11	TRIST, JOHN WILLIAM . . .	62, Old Broad Street, E.C.
355	1874, May 11	TROLLOPE, CHARLES BROWN .	13, Parliament Street, S.W.
1140	1884, Apr. 21	TROUTBECK, ROBERT . . .	Maidstone, Kent.
92	1868, Jun. 15	TRUMPER, RICHARD	23, Lincoln's Inn Fields, W.C.
110	1868, Aug. 3	TUCKETT, PHILIP DEBELL . .	10A, Old Broad Street, E.C.
521	1878, Dec. 9	TUNLEY, GEORGE	14, Clement's Lane, E.C.
1199	1884, May 26	TURNBULL, THOMAS JOHN . .	Wimborne St. Giles, near Cranborne, Dorset
904	1883, Feb. 26	TURNER, FREDERICK JOHN . .	Mansfield-Woodhouse, Mansfield, Notts.
1071	1884, Jan. 28	TURNER, JOHN	The Grange, Ulceby, Lincolnshire.
168	1869, Feb. 8	TURNER, WILLIAM	1, Butter Market, Ipswich, Suffolk.
548	1879, May 12	TURNER, WILLIAM WEBB . .	9, Clinton Place, Seaford, Sussex.
1246	1885, Jan. 26	TURNOR, EXSUPERIUS WESTON .	The Green, Stafford.
905	1883, Feb. 26	VAIZEY, JOHN GEORGE . . .	Bocking, Braintree, Essex, and 44, Bedford W.C.
1002	1883, Dec. 17	VEEVERS, RICHARD	Woningworth, Fulwood Park, Preston.
319	A. '78, Dec. 8 F. '78, Nov. 11	VENABLES, FREDERICK . . .	62, Chancery Lane, W.C.
429	1876, Feb. 21	*VERNON, ARTHUR	Borshams, High Wycombe, Bucks; and Great George Street, Westminster, S.W.
573	1880, Mar. 1	*VERNON, WALTER LIBERTY .	4, Trinity Street, Hastings; and 26, George Street, S.W.
816	1882, May 22	VIDLER, JAMES COLEMAN . .	Rye and Hastings, Sussex.
418	1876, Jan. 10	VIGERS, ASTLEY	4, Frederick's Place, E.C.
268	1871, Dec. 4	VIGERS, EDWARD, JUN. . . .	38, Parliament Street, S.W.
20	1868, Jun. 15	VIGERS, FRANCIS . . . . . *(Vice-President)*	4, Frederick's Place, E.C.
498	A. '78, Jan. 28 F. '83, Nov. 12	VIGERS, LESLIE ROBERT . .	4, Frederick's Place, E.C.
594	A. '80, Dec. 13 F. '85, Nov. 9	VIGERS, MARTIN	52, Queen Victoria Street, E.C.
46	1868, Jun. 15	VIGERS, ROBERT . . . . . *(Member of Council)*	4, Frederick's Place, E.C.
293	1872, Dec. 9	VULLIAMY, GEORGE	Metropolitan Board of Works, Spring Gar S.W.
842	1882, Dec. 18	WADE, JOHN	10, Pitt Street, Barnsley.
658	1881, Dec. 19	WAINWRIGHT, CHARLES RAWLINSON	Shepton Mallet, Somerset.
843	1882, Dec. 18	WAINWRIGHT, CHARLES RAWLINSON, JUN.	Shepton Mallet, Somerset.
906	1883, Feb. 26	WAISTELL, WILLIAM. . . .	Barnard Castle, Durham, and 6, Arden St Darlington.
1093	1884, Feb. 11	WALKER, EDWARD ROBINSON .	31, John Street, Bedford Row, W.C.
743	1882, Feb. 13	WALKER, HERBERT	Newcastle Chambers, Angel Row, Nottingha
659	1881, Dec. 19	WALKER, SAMUEL	22, Moorgate Street, E.C.

Dip. No.	Date of Election and of Transfer.	FELLOWS.	
072	1884, Jan. 28	WALL, GEORGE YOUNG . . .	Exchequer Buildings, Durham.
178	1884, May 19	WALLACE, HENRY	Trench Hall, Gateshead-on-Tyne, Co. Durham.
785	1882, Mar. 27	WALMISLEY, ARTHUR THOMAS .	5, Westminster Chambers, S.W.
925	1883, April 16	WARD, JOHN GEORGE RODNEY .	Yatton Court, Kingsland, Herefordshire.
660	1881, Dec. 19	WARE, CHARLES EDWIN . . .	Gandy Street Chambers, Exeter.
141	1884, Apr. 21	WARING, CHARLES EDWARD .	1, Charles Street, Crockherbtown, Cardiff.
162	1869, Jan. 25	WARING, THOMAS	1, Charles Street, Crockherbtown, Cardiff.
189	A. '69, Mar. 8 F. '75, Apr. 12	WARNER, WILLIAM HENRY . .	130, Mount Street, Grosvenor Square, W.
874	1883, Jan. 29	WATERMAN, JAMES	Ashford, Kent.
109	1884, Feb. 25	WATERMAN, RICHARD . . .	20, Week Street, Maidstone, Kent.
110	1884, Feb. 25	WATERS, FRANK	1, Sydney Street, Cambridge.
47	1868, Jun. 15	WATNEY, DANIEL. . . . . (*Member of Council*)	62, Old Broad Street, E.C.
574	1880, Mar. 1	WATSON, HERBERT EDWARD .	Clifton, York.
797	1882, Apr. 24	WATSON, JOHN	Shirburn Castle, Tetsworth, Oxon.
467	A. '76, Dec. 18 F. '79, Nov. 10	WATTS, CHARLES	25, Bedford Row, W.C.
1003	1883, Dec. 17	WATTS, JAMES	Broad Street, Wokingham, Berks.
284	1872, May 6	WEALL, JOHN	38, High Street, Watford.
1045	1884, Jan 14	WEATHERALL, HENRY . . .	22, Chancery Lane, W.C.
700	1882, Jan. 16	WEAVER, WILLIAM	Town Hall, Kensington, W.
215	1869, Dec. 6	WEBB, GEORGE	Tunstall, Sittingbourne, Kent.
661	1881, Dec. 19	WELLSTED, WILLIAM HENRY .	Manor Street, Kingston-upon-Hull.
744	1882, Feb. 13	WESTBURY, GEORGE HENRY .	The Knoll, Andover, Hants
88	1868, Jul. 20	WESTBURY, GILES	Andover, Hants.
779	1882, Mar. 13	WHARTON, THOMAS GEORGE .	1, Basinghall Street, E.C.
1266	1885, Apr. 20	WHITAKER, GEORGE	2, Bridge Road, Hammersmith, W.
745	1882, Feb. 13	WHITE, JOHN.	Warrington, Lancashire.
701	1882, Jan. 16	WHITELEY, CHARLES PERRY .	76, Queen Street, E.C.
350	1874, Apr. 27	WIDNELL, FREDERICK GRAINGER	13, Parliament Street, S.W.
234	A. '70, Feb. 7 F. '76, Nov. 13	WIGRAM, JOHN	South Collingham, Newark, Notts.
721	1882, Jan. 30	WILKINSON, GEORGE AYSCOUGH	7, Poultry, E.C.
1226	1884, Dec. 8	WILKINSON, THOMAS . . .	168, North Street, Brighton.
915	1883, April 2	WILKINSON, WILLIAM . . .	St. Stephen's Chambers, Telegraph Street, E.C.
1242	1885, Jan. 12	WILKS, RICHARD	Little Mongeham, near Deal, Kent.
89	1868, Jul. 20	WILLIAMS, GEORGE BARNES .	Frederick's Place, E.C.
1094	1884, Feb. 11	WILLIAMS, JOHN	Gwernhefin, Bala, North Wales.
240	1870, May 9	WILLIAMS, STEPHEN WILLIAM .	Rhayader, Radnorshire.
1307	1886, Feb. 22	WILLIAMS, THOMAS	Frederick's Place, E.C.
575	1880, Mar. 1	WILLIAMS, WILLIAM	Salop Road, Oswestry.
116	1868, Aug. 10	WILLMOT, FRANCIS	6, Waterloo Street, Birmingham.
1004	1883, Dec. 17	WILSON, JACOB	5, Great George Street, S.W.; and Chillingham, Alnwick
662	1881, Dec. 19	WILSON, THOMAS SILK . . .	Albert Square, Manchester.

Dip. No.	Date of Election and of Transfer.	FELLOWS.	
844	1882, Dec. 18	WING, WILLIAM	Caversham, Reading.
48	1868, Jun. 15	WITHALL, RICHARD AUGUSTUS .	29, Great George Street, S.W.
50	1868, Jun. 15	WOOD, FREDERICK	34, Regency Square, Brighton.
1258	1885, Feb. 23	WOOD, WILLIAM	Ifield Court, Crawley, Sussex.
663	1881, Dec. 19	WOODS, HENRY	19 & 20, Walbrook, E.C.
845	1882. Dec. 18	WOODHAMS, JAMES	50 Havelock Road, Hastings.
391	1875, Mar. 1	WOODTHORPE, EDMUND. . .	2, Coleman Street Buildings, Moorgate St.,
613	1881, Feb. 21	WOOLLEY, REGINALD. . . .	South Collingham, Newark, Notts.
427	A. '76, Feb. 7 / F. '80, Nov. 8	WOOLLEY, THOMAS CECIL SMITH	South Collingham, Newark, Notts.
51	1868, Jun. 15	WOOLLEY, THOMAS SMITH . . (*Past-President*)	South Collingham, Newark, Notts.
267	A. '71, Nov. 13 / F. '77, Jan. 29	WOOLLEY, WILLIAM EDWARD .	Loughborough, Leicestershire.
1200	1884, May 26	WRIGHT, JAMES	Irongate, Derby.
292	1872, Dec. 9	WRIGHT, WILLIAM EDWARD .	King's Lynn, Norfolk.
283	1872, Apr. 22	WRIGHT, WILLIAM	Wollaton, Nottinghamshire.
722	1882, Jan. 30	WYATT, OLIVER NEWMAN . .	East Street, Chichester.
1120	1884, Mar. 10	WYLEY, HENRY JAMES . . .	Bridgnorth, Shropshire.
1227	1884, Dec. 8	WYLEY, WILLIAM JOHN . .	2, School Chambers, Shrewsbury.
430	1876, Feb. 21	YEOMAN, GEORGE DUNDAS . .	Priory Lodge, Bedford, Bedfordshire.

Professional Associates.

The names of those Professional Associates who have qualified for the Class by Examination are distinguished thus *

The names of those Professional Associates who have further qualified by Examination for the Class of Fellows are distinguished thus ¶

Dip. No.	Date of Election.		
664	1881, Dec. 19	ADKIN, CHARLES DUNCAN . .	Wantage, Berks.
1279	1885, Dec. 7	*ARCH, ARTHUR JOSEPH EDWIN	Minas de Rio Tinto, Huelva, Spain.
1280	1885, Dec. 7	*ARNOTT, JOHN	Church Street, Woodbridge, Suffolk.
798	1882, Apr. 24	AYRES, CHARLES PRYOR . .	Gresham Lodge, Watford, Herts.
140	1868, Nov. 2	BADCOCK, PHILIP.	9, Whitehall Place, S.W.
665	1881, Dec. 19	BAILEY, LEONARD	Poole, Haresfield, Stonehouse, Gloucestersh
1281	1885, Dec. 7	*BAKER, CECIL CAUTLEY. . .	22, Great George Street, S.W.
553	1879, Dec. 8	BALDING, ALBERT	Barkway, Herts.
1111	1884, Feb. 25	BALLARD, WILLIAM WASHINGTON	46, Bedford Row, W.C.
1247	1885, Jan. 26	*BARRATT, HARRY.	Middle Street, Stourbridge, Worcestershire
622	1881, May 16	BEADEL, HENRY GRANT . . .	97, Gresham Street, E.C.

Dip. No.	*Date of Election.*	PROFESSIONAL ASSOCIATES.	
1282	1885, Dec. 7	*Beard, Edwin Thomas . .	3, St. Catherine's, Lincoln.
148	1868, Nov. 9	Beauchamp, Charles Davie .	9, Whitehall Place, S.W.
959	1883, May 25	*¶Bedells, Charles Herbert .	6, John Street, Bedford Row, W.C.
1212	1884, Nov. 10	*Benson, Robert Alan . .	112, Abbey Foregate, Shrewsbury.
875	1883, Jan. 29	Benson, Thomas	Park Farm Office, Woburn, Bedfordshire.
383	1875, Feb. 1	Bidwell, Shelford . . .	9, Whitehall Place, S.W.
876	1883, Jan. 29	Bishop, Reginald George .	2, Godliman Street, Doctors' Commons, E.C.
511	1878, May 13	Blosse, Edward F. Lynch .	Charles Street Chambers, Cardiff.
1283	1885, Dec. 7	*Blundell, Harry	Cauldon Place, Shelton, Stoke-upon-Trent.
1158	1884, May 5	Blunt, Herbert Arthur Scawen	Firle, Lewes, Sussex.
768	1882, Feb 27	Boa, Andrew.	Great Thurlow, Newmarket, Suffolk.
1159	1884, May 5	Bond, Frederick George . .	Old Bank House, Ipswich.
542	1879, Mar. 31	Boodle, Francis Edward . .	Rolls Chambers, 89, Chancery Lane, W.C.
846	1882, Dec. 18	Booth, John Frederick . .	25, Windle Street, St. Helen's, Lancashire.
666	1881, Dec. 19	Bradly, William	Compensation Office, Metropolitan Board of Works, Spring Gardens, S.W.
1073	1884, Jan. 28	Brown, Alexander	Home Farm, Hothfield, Ashford.
847	1882, Dec. 18	Brown, William Arthur . .	146, Goswell Road, E.C.
1142	1884, Apr. 21	Browne, Flint	73, Cheapside, E.C.
1046	1884, Jan. 14	Bruce, Robert Knight. . .	Mentmore, Leighton Buzzard, Bucks.
1284	1885, Dec. 7	*Buckland, Alfred Virgoe .	66, Cannon Street, E.C.
944	1883, May 21	Buckland, William Thomas .	9, Whitehall Place, S.W.
1160	1884, May 5	Butterworth, Josiah . . .	Mansfield, Notts.
799	1882, Apr. 24	Card, Henry	North Street, Lewes, Sussex.
249	1870, Dec. 12	Cardall, Frederic William .	9, Whitehall Place, S.W.
1201	1884, May 26	Castle, Sydney Charles Courtenay.	Neustead, Auckland Road, Upper Norwood, S.E.
241	1870, May 9	Catling, Robert Charles . .	Needham Hall, Elm, Cambridgeshire.
1006	1883, Dec. 17	Chapman, Vaughan Godfrey St. John	76, Queen Street, E.C.
1121	1884, Mar. 10	Chester, William Richard .	39, New Broad Street, E.C.
978	1883, Nov. 12	Chevallier, Harvey . . .	29, Molacca Street, Singapore, Straits Settlements.
1112	1884 Feb. 25	Christy, Archibald Ernest .	Boynton Hall, Chelmsford, Essex.
586	1880, Dec. 13	Clark, Harding Thomas . .	4, Agar Street, Strand, W.C.
1007	1883, Dec. 17	Clarke, Percy Henry . . .	2, Lancaster Place, W.C.
426	1876, Feb. 7	Clayden, Walter	6, Moorgate Street, E.C.
1122	1884, Mar. 10	Clifton, William Edward .	7, East India Avenue, E.C.
1285	1885, Dec. 7	*Coales, Herbert George. .	Beechwood, Newport Pagnell, Bucks.
1202	1884, May 26	Collier, Arthur Charles .	Woodhatch, Reigate.
826	1882, Dec. 4	*Collins, Marcus E. . . .	61, Old Broad Street, E.C.
320	1874, Jan. 5	Cooke, William George . .	Engineer's Office, L. & S. W. Ry., Waterloo Bridge Station.

Dip. No.	Date of Election.	PROFESSIONAL ASSOCIATES.	
746	1882, Feb. 13	COOKE, WILLIAM STEPHEN . .	9, New Broad Street, E.C.
623	1881, May 16	CONNELLY, JOHN JOSEPH . .	2, Chapel Street, Bedford Row, W.C.
926	1883, April 16	COUCHMAN, HENRY BOTELER .	Henley-in-Arden, Birmingham.
598	1881, Jan. 10	COURTHOPE, ALEXANDER . .	Bignor Park, Pulborough, Sussex.
747	1882, Feb. 13	COWPER, RICHARD WILLIAM. .	81, High Street, Sittingbourne, Kent.
222	1870, Jan. 10	CRAWLEY, WILLIAM JEEVES . .	Sayesbury, Sawbridgeworth, Herts.
961	1883, May 25	*CRAWTER, JOHN, Jun. . . .	4, Great James Street, Bedford Row, W.C.
615	1881, Mar. 21	CRESSWELL, JOHN THEODORE ROSS	9, Whitehall Place, S.W.
608	1881, Feb. 7	CROFTS, EWAN NEVILE . . .	Woodbastwick, Norwich, Norfolk.
891	1883, Feb. 12	CROSS, JOHN	80, Cheapside, E.C.
537	1879, Mar. 17	CUDLIPP, WILLIAM	62, Old Broad Street, E.C.
877	1883, Jan. 29	CUMBERBATCH, CARLTON PARRY	9, Whitehall Place, S.W.
945	1883, May 21	DAFFARN, THOMAS ALFRED. .	6, Spring Gardens, S.W.
723	1882, Jan. 30	DANSIE, FREDERICK CROWN. .	4, Frederick's Place, E.C.
907	1883, Feb. 26	DASH, ROLAND ASHFORD . .	9, Whitehall Place, S.W., and The Ho[illegible] Feltham, Middlesex.
399	1875, Apr. 26	DASHWOOD, FREDERICK LOFTUS	Kirtlington, Oxford.
848	1882, Dec. 18	DAVID, EDMUND USSHER . .	Llandaff, near Cardiff.
780	1882, Mar. 13	DAVIS, CHARLES JAMES . . .	32, Strand, W.C.
946	1883, May 21	DAWSON, HENRY AUFRERE . .	St. Leonard's, Tooting.
1008	1883, Dec. 17	DAWSON, WALTER HENRY . .	19, St. Edmund's Terrace, Regent's Park, N[illegible]
1009	1883, Dec. 17	*¶DAY, WILLIAM	23, High Street, Maidstone, Kent.
1010	1883, Dec. 17	DEMETRIADI, THOMAS MARSDEN	West Hill, Huddersfield.
878	1883, Jan. 29	DOBIE, HENRY	Post Office Box 110, Port of Spain, Trinidad.
748	1882, Feb. 13	DREW, ALLEN	80, Cheapside, E.C.
1095	1884, Feb. 11	DREW, JOHN GOULD	15, Queen Street, Exeter.
1229	1884, Dec. 8	*DUNNING, BERNARD SIMON . .	41, Claverton Street, S.W.
202	1869, Jun. 28	EASTON, EDWARD.	9, Delahay Street, S.W.
1293	1886, Jan. 11	*EILOART, ALFRED	40, Chancery Lane, W.C.
1011	1883, Dec. 17	ELLIS, CHARLES GODWIN . .	14, Fitzjohn's Parade, Finchley Road, N.W.
939	1883, April 30	ELLIS, EDWARD FELIX . . .	29, Fleet Street, E.C.
577	1880, Mar. 15	ELLIS, ERNEST HAROLD . .	132, High Street, Guildford.
1113	1884, Feb. 25	ELLIS, LEONARD ASHBY . . .	Hornsey Lane, Bermondsey, S.E.
667	1881, Dec. 19	ELWELL, WILLIAM HENRY . .	Surveyor's Office, Great Northern Railway, Ki[illegible] Cross, N.
1047	1884, Jan. 14	EVANS, TOM AUGUSTUS JOHN .	3, Old Palace Yard, S.W.
170	1869, Feb. 8	FAWCETT, JAMES POGUE. . .	29, Fleet Street, E.C.
565	1880, Jan. 19	FENNING, HERBERT SAMUEL .	Bedford Estate Office, Bedford, Bedfordshire.
609	1881, Feb. 7	FEW, HARRY GARRARD . . .	Market Place, Newbury.

Dip. No.	*Date of Election.*	PROFESSIONAL ASSOCIATES.	
921	1883, April 16	FISHER, CHARLES BROWNING .	Hill Crest, Market Harborough.
1123	1884, Mar. 10	FITNESS, JOHN FRANCIS . . .	80, Cheapside, E.C.
916	1883, April 2	FLETCHER, GEORGE RIVERS. .	10A, Old Broad Street, E.C.
1075	1884, Jan. 28	FLINT, LESLIE SENTANCE . .	54, Cheriton Road, Folkestone, Kent.
749	1882, Feb. 13	FLINT, WILLIAM HURST . . .	Lincoln's Inn Fields (corner of Serle Street), W.C.
1114	1884, Feb. 25	FREEMAN, SYDNEY	The Public Rooms, Tunbridge Wells, Kent.
750	1882, Feb. 13	FULLER, GEORGE JOHN . . .	85 & 87, Gresham Street, E.C.
947	1883, May 21	FULLER, HERBERT HENRY . .	26, Charing Cross, S.W.
1124	1884, Mar. 10	FULLER, THOMAS ALFRED . .	The College, All Saints', Derby.
751	1882, Feb. 13	FURBER, HENRY AUBREY . .	42, Marlborough Hill, N.W.
849	1882, Dec. 18	FYFE, GEORGE PETERS COLLIER	4, Walm Lane, Willesden Park, N.W.
702	1882, Jan. 16	GARROD, HERBERT JAMES . . .	Bell Street, Reigate, Surrey.
1203	1884, May 26	GAYFORD, HENRY JOHN. . . .	Raynham Estate Office, East Raynham, Norfolk.
1161	1884, May 5	GIBB, WILLIAM PASHLEY . .	75, Stamford Street, S.E.
1294	1886, Jan. 11	*‡GIBBON, WILLIAM JACOMB. .	3, Verulam Buildings, Gray's Inn, W.C.
522	1878, Dec. 9	GIBSON, WALTER MATTHEW .	Privy Purse Office, Buckingham Palace, S.W.
956	1883, May 25	GORE, WILLIAM JOLL . .	7, Hobart Place, S.W.
1096	1884, Feb. 11	GOW, JAMES	9, Whitehall Place, S.W.
979	1883, Nov. 12	GRANT, HARRY GRÆME . . .	Surveyor's Office, Great Western Railway, Paddington, W.
1012	1883, Dec. 17	GREEN, JAMES HENRY TOWNSEND	22, Chancery Lane, W.C.
1230	1884 Dec 8	*GREENOP, EDWARD	74, Bonham Road, Brixton Rise, S.W.
1076	1884, Jan. 28	GRIMWADE, HENRY	Colchester, Essex.
1231	1884, Dec. 8	*HALKYARD, WILLIAM REDFORD .	The Firs, Knutsford.
1179	1884, May 19	HALL, CHARLES PELL . . .	Wollaton, Nottingham.
1295	1886, Jan. 11	*†HALL, WILLIAM TIMOTHY . .	Uppington, Wellington, Salop.
770	1882, Feb. 27	HAMILTON, JOHN PAYNTER . .	64 and 65, Coleman Street, E.C.
892	1883, Feb. 12	HANSELL, REGINALD GODDARD.	Lonsdale Chambers, 27, Chancery Lane, W.C.
1013	1883, Dec. 17	HARLAND, ARTHUR . . .	Percy Chambers, 15, Charlotte Street, Fitzroy Square, W.
614	1881, Feb. 21	HARPER, EDGAR JOSIAH . .	Estate Office, Metropolitan Board of Works, Spring Gardens, S.W.
523	1878, Dec. 9	HARVEY, JOHN JAMES SAYER .	1, Parade, Canterbury, Kent.
962	1883, May 25	*¶HASLUCK, LANCELOT GERALD .	Green Hill Park, New Barnet, Herts.
1287	1885, Dec. 7	*HEBBLETHWAITE, CHAS. HENRY	1, Norfolk Place, Halifax, Yorkshire
1014	1883, Dec. 17	HEBDEN, GEORGE RADCLIFFE .	66, Cannon Street, E.C.
588	1880. Dec. 13	HEDGER, ARTHUR CONSTANTINE	80, Cheapside, E.C.
821	1882, Nov. 13	HENDERSON, HENRY ARTHUR .	New Stone Buildings, 59, Chancery Lane, W.C.
928	1883, April 16	HENRY, EDWARD HUGH. . .	2, The Pavement, Clapham Common, S.W.
850	1882, Dec. 18	HEWITT, WILLIAM	22, St. Owen Street, Hereford.

‡ Driver Prize, 1885. † Institution Prizeman, 1884.

Dip. No.	Date of Election.	PROFESSIONAL ASSOCIATES.	
948	1883, May 21	HICKS, STANLEY	Oakfield, Streatham Hill, S.W.
1303	1886, Jan. 25	*HILLIARD, GEORGE EDWARD .	Chelmsford, Essex.
1015	1883, Dec. 17	HINCHLIFFE, JOHN, JUN. . .	Bullhouse Hall, Pennistone, Sheffield.
1180	1884, May 19	HODSOLL, WILLIAM, JUN. . .	Farningham, Kent.
908	1883, Feb. 26	HOLBECHE, ÆMILIAN HENRY .	26, Pinfold Gate, Loughborough.
893	1883, Feb. 12	HOLLAND, THOMAS JAMES, JUN.	1, Pembroke Cottages, Edwardes Square, Kensington, W.
879	1883, Jan. 29	HOLMES, JAMES THOMAS . .	97, Gresham Street, E.C.
822	1882, Nov. 13	HOMFRAY, WILLIAM FRANCIS .	Rease Heath Estate Office, Nantwich, Cheshire.
1181	1884, May 19	HOOPER, ALFRED FREDERICK .	Junction Road, Andover, Hants.
1097	1884, Feb. 11	HOPE, WILLIAM ELLIOTT . .	91, Tufnell Park Road, N.
1048	1884, Jan. 14	HOPKINS, EDWIN	9, Whitehall Place, S.W.
866	1883, Jan. 15	HOWELL, ERNEST JOHN . . .	116, Cromwell Road, S.W.
1016	1883, Dec. 17	HUSKINSON, THOMAS WILLIAM .	Epperstone Manor, Nottingham.
1017	1883, Dec. 17	HUSSEY, GEORGE HENRY CLELAND	1, Gray's Inn Place, W.C.
1182	1884, May 19	HUSSEY, ROBERT	Ringstead Rectory, King's Lynn, Norfolk.
1162	1884, May 5	I'ANSON, BRYAN WALTER . .	Preston House, Whitehaven, Cumberland.
610	1881, Feb. 7	INGLEBY, HERBERT	7, Whitehall Place, S.W.
851	1882, Dec. 18	INGRAM, HENRY LAW . . .	97, Gresham Street, E.C.
550	1879, Nov. 24	JESSETT, CHARLES	62, Old Broad Street, E.C.
964	1883, May 25	*¶JONES, HENRY ARTHUR . .	53, Maida Vale, W.
673	1881, Dec. 19	JONES, THOMAS	3, Old Palace Yard, S.W.
226	1870, Jan. 24	JOHNSTON, ANDREW	97, Gresham Street, E.C.
1018	1883, Dec. 17	JORDAN, GEORGE HENRY . .	16, Whitehall Place, S.W.
1323	1886, May 17	*JULL, WILLIAM VINCENT . .	Wrotham Lodge, Streatham Hill, S.W.
412	1875, Dec. 13	KAYE, JOHN EDWARD . . .	Grove Hall, Wakefield.
674	1881, Dec. 19	KEATES, WILLIAM ALIEN . .	Castle Chambers, Newport, Mon.
1163	1884, May 5	KEELING, GILBERT	2, Tokenhouse Buildings, Lothbury, E.C.
880	1883, Jan. 29	KEER, WILLIAM	80, Cheapside, E.C.
1077	1884, Jan. 28	KERR, ARTHUR HERBERT . .	Borrowby, Thirsk, Yorkshire.
624	1881, May 16	KETTLE, FREDERICK CHARLES .	Tower Chambers, Moorgate Street, E.C.
1125	1884, Mar. 10	KING, ALFRED	6, Spring Gardens, S.W.
853	1882, Dec. 18	KNOWLES, HENRY . . .	Wells Green, Gloucester.
1019	1883, Dec. 17	LAWRENCE, WILLIAM ROBERT	22, Surrey Street, Victoria Embankment, W.C.
441	1876, Apr. 3	LEE, GEORGE CANSFIELD . .	North Eastern Railway, York.

Dip. No.	*Date of Election.*	PROFESSIONAL ASSOCIATES.	
675	1881, Dec. 19	LEONARD, HENRY HOLMES . .	202, Bishopsgate Street Without, E.C.
1143	1884, Apr. 21	LIGHTFOOT, JOHN GEORGE . .	9, Whitehall Place, S.W.
949	1883, May 21	LITTLE, WILLIAM DAVIS. . .	Middleton Stoney, Bicester, Oxon.
1164	1884, May 5	LOFTS, HENRY FAIRLAM . .	130, Mount Street, W.
854	1882, Dec. 18	LOMER, MONTAGUE FRANK . .	Southampton, Hants.
1183	1884, May 19	LOVESAY, WILLIAM	4, Frederick's Place, E.C.
1126	1884, Mar. 10	LOW, ROBERT JOHN	Cumberland Road, St. Albans, Herts.
489	1877, May 14	LUCAS, JOSEPH	21, Defoe Road, Tooting Graveney, S.W.
1204	1884, May 26	LYNCH, JAMES HENRY . . .	302, Regent Street, W.
917	1883, April 2	LYSTER, THOMAS RICE SOMERVILLE	Bedford Office, Thorney, Peterborough.
1144	1884, Apr. 21	MCCALLUM, PETER SERVICE .	Land Agent's Office, Midland Railway, Derby.
1318	1886, May 3	*MADDOX, CHARLES RALPH . .	20, Baker Street, W.
470	1877, Jan. 15	MARRIOTT, GEORGE WHARTON .	41, West Cromwell Road, South Kensington, S.W.
459	1876, Nov. 27	MARTIN, CHARLES WILLIAM .	Quorn Place, Loughborough, Leicestershire.
1288	1885, Dec. 7	*MASSIE, FRANK	St. Paul's Chambers, Sheffield.
1308	1886, Feb. 22	*MEAD, JOHN HENRY . . .	9, Whitehall Place, S.W.
1145	1884, Apr. 21	MERRETT, JAMES.	9, Whitehall Place, S.W.
497	1878, Jan. 28	MESTON, JOSEPH FYFE . . .	50, Parliament Street, S.W.
752	1882, Feb. 13	MILNES, ROBERT, JUN. . . .	9, Arnold Road, Tooting Junction, S.W.
1232	1884, Dec. 8	*MIXER, EDWARD	80, Cheapside, E.C.
1165	1884, May 5	*¶MOORE, HAROLD EDWARD .	1, Essex Street, Strand, W.C., and Boreham, near Chelmsford, Essex.
1127	1884, Mar. 10	MOSS, THOMAS WALTER. . .	21,Doughty Street, W.C.
965	1883, May 25	*MOYES, JOHN HELENUS . . .	26, Trinity Street, Cambridge.
1166	1884, May 5	MYLNE, WILLIAM JOHN HOME .	Ravenscourt, Hammersmith, W.
856	1882, Dec. 18	NEWMAN, CHARLES HENRY . .	97, Gresham Street, E.C.
1020	1883, Dec. 17	NEWTON, THOMAS EDWIN . .	St. Peter's Street, Winchester.
335	1874, Feb. 2	NIXON, SAMUEL . .	29, Great George Street, S.W.
1128	1884, Mar. 10	NORRIS, EDWARD JAMES . . .	9, Whitehall Place, S.W.
502	1878, Feb. 11	NORRIS, WALTER HENRY . .	St. Andrew's, Watford, Herts.
676	1881, Dec. 19	NOTTAGE, WILLIAM GRIGGS . .	High Street, Windsor.
1098	1884, Feb. 11	OWEN, THOMAS HENRY . . .	Haverfordwest, Pembrokeshire.
781	1882, Mar. 13	PAGE, THOMAS GOWLAND . .	57, Coleman Street, E.C.
966	1883, May 25	*¶PAIN, JAMES	Borough, Micheldever, Hants.

Dip. No.	Date of Election.	PROFESSIONAL ASSOCIATES.	
567	1880, Jan. 19	PARKER, THE HON. CECIL THOMAS	Eccleston, Chester.
957	1883, May 25	PARSONS, ROBERT MAURICE PETERS	Misterton, Crewkerne, Somerset.
967	1883, May 25	*¶PAULL, ALAN	50, Highgate Road, N.W.
402	1875, May 10	PAYNE, WILLIAM PERCY	Holmesdale, The Park, Nottingham.
285	1872, Nov 11	PAYNE, WILLIAM SETH ROBERT	St. Benet Chambers, 1, Fenchurch Street, E
857	1882, Dec. 18	PEACE, ALFRED LINDLEY	Thorne, Doncaster.
1146	1884, Apr. 21	PEARCE, FREDERICK WILLIAM	9, Whitehall Place, S.W.
1167	1884, May 5	PEARCE, WILLIAM JOHN	4, Frederick's Place, E.C.
1184	1884, May 19	PERRERS, HARRY WILSON	171, High Street, Lewisham, S.E.
216	1869, Dec. 6	PETRE, THE HON. HENRY WILLIAM	Springfield, Chelmsford, Essex.
1078	1884, Jan. 28	*PETRE, ROBERT GEORGE	9, Whitehall Place, S.W.
1021	1883, Dec. 17	PEWTRESS, HERBERT WILMSHURST	New Stone Buildings, 59, Chancery Lane.
1129	1884, Mar 10	PHILLIPS, GEORGE CAWKWELL	Mildmay Road, Chelmsford, Essex.
1079	1884, Jan 28	PHILLIPS, JOHN HENRY	130, Mount Street, Berkeley Square, W.
968	1883, May 25	*¶PILDITCH, PHILIP EDWARD	17, Parliament Street, S.W.
1022	1883, Dec. 17	POWELL, HUBERT JOHN	St. Swithin's, Lewes, Sussex.
1205	1884, May 26	PRICE, THOMAS WILLIAM	59, Fenchurch Street, E.C.
1099	1884, Feb. 11	PRIDHAM, JOHN LAWRENCE	Paignton, South Devon.
1080	1884, Jan. 28	PURCHASE, EDWARD KEYNES	124-127, Mansion House Chambers, E.C.
1289	1885, Dec. 7	*RAND, JOHN	Walton House, Grove Hill, Dulwich, S.E.
929	1883, April 16	REID, FRANCIS	Bucksford House, Ashford, Kent.
801	1882, Apr. 24	REX, CHARLES WILLIAM	311, Kentish Town Road, N.W.
802	1882, Apr. 24	REX, FRANCIS HERBERT	311, Kentish Town Road, N.W.
881	1883, Jan. 29	RIGDEN, CHARLES FURNER	15, Parliament Street, S.W.
423	1876, Jan. 24	ROBERTS, Q. CHARLES	3, Upper Montague Street, Russell Square, 2, South Square, Gray's Inn, W.C.
753	1882, Feb. 13	ROBERTS, CHARLES GORDON	42, New Broad Street, E.C.
754	1882, Feb. 13	ROBEY, ROBERT	Oaklands, East Tytherley, near Romsey, Har
725	1882, Jan. 30	ROBINSON, JAMES THOMAS	85, Stockwell Park Road, Brixton, S.W.
803	1882, Apr. 24	ROBINSON, MARTIN CATLIN	Oakley Hall, Bishops Stortford.
969	1883, May 25	*†¶ROLLESTON, WILLIAM GUSTAVUS STANHOPE	Grey Friars, Leicester.
980	1883, Nov. 12	ROPER, WILLIAM	1, Lansdowne Place, Mount Pleasant R Tunbridge Wells.
1130	1884, Mar. 10	ROSE, EDWARD JOSEPH	48, Broad Street, Oxford.
1081	1884, Jan. 28	ROSS, DAVID JAMES	Surveyors' Office, Guildhall, E.C.
940	1883, April 30	ROWLANDSON, CHRISTOPHER	The College, Durham.
970	1883, May 25	*RUNDLE, EDWARD COLLINS	Bedford Office, Tavistock, Devon.

† Institution Prizeman, 1883.

ip.	Date of Election.	PROFESSIONAL ASSOCIATES.	
923	1883, Dec. 17	Rüntz, Ernest Augustus . .	22, Moorgate Street, E.C.
906	1884, May 26	Russell, James Elgar. . .	Thames House, Wallingford, Berks.
909	1883, Feb. 26	Ryde, Charles Bertram . .	29, Great George Street, S.W.
924	1883, Dec. 17	Sabin, Joseph Henry . . .	16, Whitehall Place, S.W.
933	1884, Dec. 8	*Sadler, George William, Jun.	Keynsham Villa, Cheltenham.
938	1876, Mar. 20	St. Quintin, Richard Samuel	37, Threadneedle Street, E.C.
971	1883, May 25	*Satchell, Charles. . . .	Allen, Alderson, & Co., Alexandria, Egypt.
947	1884, Apr. 21	Saunders, Samuel Brown. .	Estate Office, L. & S. W. Ry., Waterloo Station, S.E.
782	1882, Mar. 13	Savill, Alfred, Jun. . . .	39, New Broad Street, E.C.
948	1884, Apr. 21	Scarlett, Harry	Downland, Uckfield, Sussex.
967	1883, Jan. 15	Scammell, Thomas	27, Market Hill, Cambridge.
755	1882, Feb. 13	Scriven, Charles Herbert .	Oakley House, Scole, Norfolk.
934	1884, Dec. 8	*Selby, John Baseley . . .	Atherton Old Hall, Leigh, near Manchester.
572	1880, Feb. 16	Sexby, John James	Metropolitan Board of Works, Spring Gardens, S.W.
049	1884, Jan. 14	Shackle, Edward Neild . .	Botwell Lodge, Hayes, Middlesex.
950	1883, May 21	Shaw, John, Jun.	The College, All Saints', Derby.
949	1884, Apr. 21	Sherry, Nathaniel. . . .	49, Fenchurch Street, E.C.
706	1882, Jan. 16	Sherwin, Joseph Henry . .	16, Whitehall Place, S.W.
503	1878, Feb. 11	Shoppee, Conrad Joseph . .	Fore Street, Hertford, Hertfordshire.
811	1882, May 8	Simmons, Charles Franklin .	Basingstoke, Hants; and Henley-on-Thames.
824	1882, Dec. 4	Simmons, William Anker .	Henley-on-Thames.
082	1884, Jan. 28	Skewis, Edwin	39, New Broad Street, E.C.
858	1882, Dec. 18	Skingle, Alfred	29, Fleet Street, E.C.
050	1884, Jan. 14	Slade, Isaac	54, Cannon Street, E.C.
538	1879, Mar. 17	Smith, George Cecil . . .	16, Whitehall Place, S.W.
804	1882, Apr. 24	Smith, Reginald W. . . .	1, Temple Row West, Birmingham.
894	1883, Feb. 12	Smith, Wheater	17, Hampton Place, Bradford.
152	1868, Nov. 9	Smyth, Edward	9, Whitehall Place; and 52, Wiltshire Road, Brixton, S.W.
		(Professional Associate of Council)	
868	1883, Jan. 15	Stacey, William	80, Cheapside, E.C.
911	1883, Mar. 12	Stenning, Percy Haines . .	121, Cannon Street, E.C.
710	1882, Jan. 16	Stevenson, Frederick J. . .	4, Frederick's Place, E.C.
828	1882, Dec. 4	Stower, Joseph	29, Fleet Street, E.C.
415	1875, Dec. 13	Strutt, The Hon. Edward Gerald	Terling Place, Witham, Essex.
235	1884, Dec. 8	*Sturge, Theodore	34, Corn Street, Bristol.
296	1886, Jan. 11	*Sturgess, John Moore . .	Penshurst Park, near Tunbridge, Kent.
756	1882, Feb. 13	Swinscow, Harold Edwin . .	2, Streatham Hill, S.W.

Dip. No.	*Date of Election.*	PROFESSIONAL ASSOCIATES.	
1115	1884, Feb. 25	TANNER, WILLIAM	2, Bridge Street, Newport, Monmouthshire.
771	1882, Feb. 27	TAPP, ARTHUR	15, Great George Street, S.W.
805	1882, Apr. 24	TARLETON, ROGER	4, Market Street, Northwich, Cheshire.
1025	1883, Dec. 17	TAYLOR, EDWARD SYDNEY . .	Sandycroft, Chester.
212	1869, Jul. 26	TAYLOR, GEORGE.	Hillside House, Turner's Hill, Crawley, Su and 17, Abchurch Lane, E.C.
678	1881, Dec. 19	TAYLOR, JOHN WILLIAM . . .	33, Westgate Road, Newcastle-upon-Tyne.
1026	1883, Dec. 17	TAYLOR, MATTHEW	Northchapel, Petworth, Sussex.
806	1882, Apr. 24	THEOBALD, HENRY	1, Deanery Road, Romford Road, Stratford G E., and 97, Finsbury Pavement, E.C.
1027	1883, Dec. 17	THOMPSON, ALFRED	Estate Department, South Eastern Raili London Bridge, S.E.
1185	1884, May 19	THOMPSON, WILLIAM	4, Eleanor Villas, St. Mary's Road, Ilford, E
869	1883, Jan. 15	THORNTON, WILLIAM HENRY .	Castle Keep, Reigate, Surrey, and The Surv General's Department, Ceylon.
757	1882, Feb. 13	THORPE, CHRISTOPHER . . .	Cutthorpe Hall, Chesterfield.
1100	1884, Feb. 11	THURGOOD, ERNEST CHARLES .	27, Chancery Lane, W.C.
591	1880, Dec. 13	THURNALL, JOHN EDWARD . .	Royston, Herts.
1297	1886, Jan. 11	*†TIFFEN, JOHN HENRY. . .	Conservancy Buildings, Hull.
972	1883, May 25	*¶‡TREADWELL, HENRY JOHN .	5, Agar Street, Strand, W.C.
592	1880, Dec. 13	TROLLOPE, HENRY CHARLES .	7, Hobart Place, S.W.
1131	1884, Mar. 10	TRUMPER, JOHN ALFRED. . .	23, Lincoln's Inn Fields, W.C.
1051	1884, Jan. 14	TUDOR, COLIN AUGUSTUS BUCHANAN	Booth Ferry Road, Goole, Yorkshire.
1052	1884, Jan. 14	TUDOR, EDWARD CHARLES BUCHANAN	West House, Booth Ferry Road, Goole, Y shire.
1168	1884, May 5	UDNY, AUGUSTUS CHARLES . .	35, Duke Street, Brighton.
1208	1884, May 26	VIGERS, SIDNEY	18, Abingdon Street, S.W.
535	1879, Mar. 3	WAKEFIELD, GODFREY . . .	40, Chancery Lane, W.C.
576	1880, Mar. 1	WALKER, LEON VICTOR . . .	Summerhill Road, West Green Road, N.
1028	1883, Dec. 17	WALLIS, JOHN DAVID . . .	3, Old Palace Yard, S.W.
1029	1883, Dec. 17	WARD, GEORGE	2, Lancaster Place, W.C.
1030	1883, Dec. 17	WATERER, CLARENCE . . .	Dover House, Chertsey, Surrey.
758	1882, Feb. 13	WATERS, WILLIAM RICHARD .	145, Dulwich Road, Herne Hill, S.E.
1101	1884, Feb. 11	WATKINS, ROBERT ARUNDEL .	Castle Combe, Chippenham.
951	1883, May 21	WATNEY, WALTER DANIEL . .	9, Whitehall Place, S.W.
1236	1884, Dec. 8	*WATSON, JAMES BRUCE . . .	Place Farm, Doddinghurst, Brentwood, Esse

† Institution Prizeman, 1885. ‡ Driver Prize, 1883.

ip. o.	Date of Election.	PROFESSIONAL ASSOCIATES.	
90	1885, Dec. 7	*WATSON, JOHN, JUN.	Estate Office, Shirburn, Tetsworth, Oxon.
79	1881, Dec. 19	*‖WEBB, JONAS MARSHALL	7, Prince's Street, Hanover Square, W.
31	1883, Dec. 17	WELLS, EDWARD OGBOURN	9, Whitehall Place, S.W.
69	1884, May 5	WELLS, WILLIAM HOWLEY	Estate Office, Evershot, Dorset.
30	1883, April 16	WESTON, GEORGE	20, Oakington Road, St. Peter's Park, Paddington, W.
41	1883, April 30	WESTON, JOSEPH AURELIUS.	83, High Street, Bedford.
60	1882, Dec. 18	WILCOCKS, FREDERICK C.	12, Netherwood Road, West Kensington Park, W.
70	1884, May 5	WILES, WILLIAM	Retreat Cottage, Grove Lane, Stamford Hill, N.
37	1884, Dec. 8	*WILLARD, THOMAS	Estate Office, L. & N.W. Ry., Euston Station, N.W.
78	1875, Jan. 18	WILLIAMS, LEONARD JAMES	6, Furnival's Inn, E.C.
04	1886, Jan. 25	*WILLIAMS, SIDNEY	5, Chancery Lane, E.C.
61	1882, Dec. 18	WILLIAMS, TOM	Clarence Street, Staines.
68	1880, Jan. 19	WILLIAMS, WILLIAM HERBERT	Llandaff, Glamorganshire.
42	1876, Apr. 3	WILLIAMS, WILLIAM WELSBY	Farnham, Surrey.
07	1882, Apr. 24	WILLMOT, JOHN	6, Waterloo Street, Birmingham.
83	1884, Jan. 28	WILLOUGHBY, CHARLES WILLIAM	22, Chancery Lane, W.C.
50	1884, Apr. 21	WINDER, GEORGE ALEXANDER	Escot Estate Office, Fairmile, Ottery St. Mary.
39	1879, Mar. 17	WOOD, HENRY	97, Gresham Street, E.C.
11	1882, Jan. 16	WOODWARD, WILLIAM	13, Granville Square, W.C.
80	1881, Dec. 19	WREATHALL, ROBERT T.	30, Walbrook, E.C.
95	1880, Dec. 13	WRIGHT, THOMAS HAWKINS.	Lundy Island, viâ Instow, North Devon.
51	1884, Apr. 21	WYAND, BENJAMIN JOHN	35, Marloes Road, Kensington, W.
99	1881, Jan. 10	YOUNG, ANDREW	The School Board for London, Victoria Embankment, W.C.
24	1878, Dec. 9	YOUNG, MORGAN HENRY	6, John Street, Bedford Row, W.C.

‖ President's Prize, 1884.

Associates.

Date of Election.		
1876, Mar. 20	Acland, Sir Thomas Dyke, Bart., M.P.	75, Eaton Square, S.W., and Killerton, Exeter.
1882, Mar. 27	Anderson, Charles Henry	9, King's Bench Walk, Temple.
1880, Dec. 13	Bankes, John Eldon	4, Elm Court, Temple.
1868, Jul. 27	Barry, John Wolfe (*Associate of Council*)	23, Delahay Street, S.W.
1875, Dec. 13	Batten, John Winterbotham	3, Harcourt Buildings, Temple.
1876, Dec. 18	Bazalgette, Charles Norman	2, Paper Buildings, Temple.
1879, Feb. 3	Beale, James Samuel	28, Great George Street, S.W.
1869, Feb. 22	Bidder, George Parker, Q.C.	3, Paper Buildings, Temple.
1875, Feb. 1	Birch, Robert William Peregrine	2, Westminster Chambers, S.W.
1884, May 19	Bolton, William Henry	34, Stanhope Gardens, W.
1868, Jun. 23	Bramwell, Sir Fredk. Joseph, F.R.S.	5, Great George Street, S.W.
1884, Feb. 11	Bund, John W. Willis.	3, Stone Buildings, Lincoln's Inn, W.C.
1869, Jul. 26	Carlisle, William Thomas	8, New Square, Lincoln's Inn, W.C.
1871, Feb. 13	Castle, Edward James	8, King's Bench Walk, Temple.
1876, Nov. 13	Clarke, Daniel	Easton Street, High Wycombe, Bucks.
1883, Dec. 17	Clarke, Edward, Q.C., M.P.	5, Essex Court, Temple.
1883, Dec. 17	Clode, Walter	3, Harcourt Buildings, Temple.
1885, Jan. 12	Cripps, Charles Alfred	2, Mitre Court Buildings, Temple.
1882, Mar. 27	Day, William Ansell	18, New Bridge Street, Blackfriars, S.E.
1883, April 16	Dethridge, Frank	Vestry Hall, Harrow Road, Paddington, W.
1883, April 30	Druce, Samuel Benjamin Large	2, Old Buildings, Lincoln's Inn, W.C.
1869, Feb. 22	Fowler, Sir John	2, Queen Square Place, S.W.
1886, Jan. 11	Fream, William, F.L.S., F.G.S.	The College of Agriculture, Downton, Wilts.
1878, Feb. 11	Freeman, George Mallows	11, King's Bench Walk, Temple.
1878, Mar. 11	Freshfield, Edwin	5, Bank Buildings, E.C.
1876, Mar. 20	Freshfield, William Dawes	5, Bank Buildings, E.C.
1876, Dec. 18	Gedge, Sydney	1, Old Palace Yard, S.W.

Date of Election.	ASSOCIATES.	
1879, Apr. 28	Gepp, Charles Bramston Osborne	Chelmsford, Essex.
1874, Feb. 16	Goldney, Gabriel Prior	Remembrancer's Office, Guildhall, E.C.
1869, Jan. 11	Grantham, Richard Boxall	Northumberland Chambers, Northumberland Avenue, W.C.
1874, Jan. 5	Grantham, Richard Fuge	Northumberland Chambers, Northumberland Avenue, W.C.
1881, Dec. 19	Groves, William	28, Great George Street, S.W.
1880, Dec. 13	Gully, William Court, Q.C.	Farrar's Buildings, Temple.
1881, Dec. 19	Halsey, Edward Joseph	2, Stanwick Road, West Kensington, W.
1882, Mar. 27	Hamilton, Henry Best Hans	1, Brick Court, Temple.
1884, May 5	Hamond, Thomas Astley Horace	56, Lincoln's Inn Fields, W.C.
1884, Apr. 21	Harris, Richard Reader	1, Temple Gardens, Temple.
1881, Dec. 19	Head, John Merrick	Reigate, Surrey.
1875, Dec. 13	Higgin, William Housman, Q.C.	4, St. James' Square, Manchester.
1875, Jan. 4	Hill, Alexander Staveley, Q.C., M.P.	13, King's Bench Walk, Temple; and Oxley Manor, Stafford.
1880, Dec. 13	James, Sir Henry, Q.C., M.P.	1, New Court, Temple.
1885, Jan. 12	Jongh, John Isidore de	San José, Costa Rica, Central America.
1873, April 21	King, William	Gas Office, Duke Street, Liverpool.
1883, Nov. 12	Kirby, Alfred Octavius	1, Old Palace Yard, S.W.
1874, Feb. 2	Ledgard, Frederick Thomas Durell, Q.C.	1, Temple Gardens, Temple.
1874, Feb. 16	Littler, Ralph Daniel Makinson, Q.C.	4, Temple Gardens, Temple.
1869, Mar. 8	Lott, Joseph	19, Great George Street, S.W.
1874, Feb. 16	Marriott, The Right Hon. William Thackeray, Q.C., M.P.	6, Crown Office Row, Temple.
1879, Jan. 6	Meysey-Thompson, Albert Childers	41, Parliament Street, S.W.; and 1, King's Bench Walk, Temple.
1875, Jan. 4	Michael, William Henry, Q.C.	38, Parliament Street, S.W.
1881, Feb. 7	Mosley, Tonman	Bangors, Iver, Uxbridge.
1882, Dec. 18	Munton, Francis Kerridge	95A, Queen Victoria Street, E.C.

Date of Election.	ASSOCIATES.	
1869, Feb. 22	PHILBRICK, FREDK. ADOLPHUS, Q.C.	Lamb Building, Temple.
1884, Feb. 11	POPE, SAMUEL, Q.C.	38, Parliament Street, S.W.
1886, Jan. 11	PROCTER, FOSTER WILFRED .	36, Lincoln's Inn Fields, W.C.
1871, Feb. 27	QUICK, JOSEPH, JUN. . . .	29, Great George Street, S.W.
1868, Nov. 9	REES, JOHN CHARLES . . .	13, Great George Street, S.W.
1885, Jan. 26	RICKARDS, ARTHUR GEORGE .	9, King's Bench Walk, Temple.
1882, Jan. 16	RIGG, HERBERT ADDINGTON .	9, King's Bench Walk, Temple.
1875, Nov. 8	RYDE, EDWARD HARROW . .	Cranley House, Fontenoy Road, Balham, S.W.
1883, April 2	RYDE, WALTER CRANLEY . .	1, Brick Court, Temple.
1884, Dec. 8	SCOTT, THE HON. HENRY ROBERT	Springfield, Coldstream, N.B.
1886, Apl. 12	SHOPPEE, GERALD AUGUSTINE .	7, Furnival's Inn, E.C.
1879, Apr. 28	SLADEN, ST. BARBE	1, Delahay Street, S.W.
1878, Apr. 8	SMITH, JOHN SMALMAN . . .	3, Hare Court, Temple.
1879, Apr. 28	SMITH, LUMLEY, Q.C. . . .	4, Paper Buildings, Temple.
1884, Jan. 14	STATHAM, WILLIAM ARNOLD .	12, King's Bench Walk, Temple, and 38, Parliament Street, S.W.
1882, Jan. 16	STEPHENS, PEMBROKE S., Q.C. .	1, Plowden Buildings, Temple.
1886, May 3	STEVENS, WILLIAM RICHARD .	6, St. Thomas Street, S.E.
1881, Jan. 24	STEVENSON, GEORGE WILSON .	38, Parliament Street, S.W.
1875, Jan. 4	STRUTT, FREDERICK, THE HON.	Milford House, Derby.
1877, Dec. 10	SUTTON, HENRY	Farrar's Building, Temple.
1880, Dec. 13	THOMAS, HUBERT	Watford, Herts.
1868, Jul. 20	TROLLOPE, GEORGE FRANCIS .	15, Parliament Street, S.W.
1895, May 18	WARREN, REGINALD AUGUSTUS.	99, Great Russell Street, W.C.
1876, Nov. 27	WEBSTER, SIR RICHD. EVERARD, Q.C., M.P. (*Associate of Council*)	2, Pump Court, Temple.
1884, May 26	WELLS, ALFRED DODD . . .	Sotwell Hill, Wallingford, Berks.
1886, May 17	WHEELER, THOMAS WHITTENBURY	4, Crown Office Row, Temple.
1871, Feb. 13	WHITE, FREDERICK MEADOWS, Q.C.	4, Paper Buildings, Temple, and 42, Sussex Gardens, Hyde Park, W.
1873, Jan. 27	WHITE, THOMAS JENNINGS . .	8, Whitehall Place, S.W.
1876, Dec. 18	WILL, JOHN SHIRESS, Q.C., M.P	2, Garden Court, Temple.
1875, May 15	WINCKWORTH, LEWIS . . .	31, Abingdon Street, S.W.
1870, Jan. 10	WING, THOMAS TWINING . .	17, Woburn Square, W.C.
1882, Dec. 18	WOOLF, SIDNEY	7, King's Bench Walk, Temple.

Students.

Passed Preliminary Examination.		
1884	ADKIN, BENAIAH WHITLEY . .	Caldicote Lodge, Wantage, Berks.
1885	ARCHIBALD, CHARLES FALCON .	College of Agriculture, Downton, Salisbury.
1886	BAGOT, HAROLD FREDERIC. .	Harpsden Rectory, Henley-on-Thames.
1886	BALL, JAMES B.	10, Grosvenor Terrace, Torquay.
1886	BATEMAN, ARTHUR CHARLES .	Oriel House, Witney, Oxon.
1886	BELCHER, EDWARD JOHN . .	25, Charlotte Street, Fitzroy Square, W.
1885	BENSLEY, OLIVER ELLIOT . .	1, Peak Hill Avenue, Sydenham, S.E.
1886	BOOTH, GILBERT WILLIAM . .	Templeton Villa, 22, Endlesham Road, Balham, S.W.
1886	BOWKER, HERBERT WILLIAM .	Saffron Walden, Essex.
1886	BRADY, RALPH HOLLINSHED .	Lark Hill House, Stockport.
1886	BRIDGFORD, LEO APPLETON .	Southfield, Crumpsall, Manchester.
1885	BUSS, FLEETWOOD GEORGE WILLIAM	37, South Hill Park, Hampstead, N.W.
1884	CALLENDAR, WILLIAM JACKSON .	Peacocks Margretting, Ingatestone.
1886	CAMBRIDGE, WILLIAM JAMES .	17, Prospect Street, Reading, Berks.
1886	CAVE, BASIL SHILLITO . . .	Queensberry House, Richmond, Surrey.
1885	CHAMPION, LLEWELYN CHARLES	23, Belsize Park, Hampstead, N.W.
1886	CHAPMAN, GEORGE HERBERT .	53, Danesgate, Lincoln.
1886	COLLINS, ADRIAN CHARLES . .	61, Old Broad Street, E.C.
1884	CROSS, ARNOULD CHARLES MARTIN	11, Brailsford Road, Tulse Hill, S.W.
1886	DAVEY, HENRY THOMAS . .	Cornwallis Terrace, Hastings, Sussex.
1886	EAGLAND, WILLIAM FRANCIS .	Burley, Leeds.
1886	ELTON, CECIL WILLIAM STUART	24, Girdler's Road, West Kensington Park, W.
1884	EVE, HERBERT TRUSTRAM . .	2, St. Paul's Square, Bedford, Beds.
1884	EVE, WILLIAM HAROLD . . .	10, Union Court, Old Broad Street, E.C.
1885	EVES, WILLIAM LIONEL . . .	Milton House, Uxbridge.
1885	FITZ-HUGH, WILLIAM REGINALD	College of Agriculture, Downton, Salisbury.
1885	GOODMAN, PERCY.	Alverbank, West Road, Clapham Park, S.W.
1884	GOODWIN, EDWARD	Cannon Court, Wateringbury, Kent.

Passed Preliminary Examination.	STUDENTS.	
1885	Gough, George Sydney . .	Pargeter Street, Stourbridge, Worcestershire.
1885	Green, Thomas John . . .	1, Surrey Villas, Sevenoaks, Kent.
1886	Grimes, Ralph Fearon . .	Fernbank, Balham, S.W.
1886	Grover, Arthur	East Lynn, Woodberry Down, Stamford Hill, N.
1884	Halton, Harry Russell . .	3, Carleton Road, Tufnell Park, N.
1886	Harding, Frederick Allcroft	19, Harewood Square, N.W.
1885	Harding, Reginald Bruce. .	St. Peter's Street, St. Alban's, Herts.
1886	Haslam, Dryland, Jun. . .	Warren House, Caversham, near Reading.
1886	Hawker, Claude Julian . .	Willingore, Grantham, Lincolnshire.
1884	Homan, Hubert Franklin. .	The New Friars, Boley Hill, Rochester.
1884	Hussey, John Walton . . .	Beechcroft, St. David's, Exeter.
1885	Jenkins, Henry Lewin . . .	Elston Hill, Devizes, Wiltshire.
1886	Jessett, Charles Edward Vernon.	4, Freke Road, Lavender Hill, S.W.
1884	Jonas, Harry Marshall . .	27, Market Hill, Cambridge.
1885	Jonas, Samuel Marshall . .	64, Redcliffe Gardens, South Kensington, S.W.
1885	Jones, Frederick Herbert .	Normanhurst, Ealing, W
1884	King, William Isaac . . .	The Grange, Highgate, N.
1885	Lumley, Julian Arthur . .	22, St. James's Street, S.W.
1886	Lynam, William Valentine .	Hartshill, Stoke-upon-Trent.
1885	Mann, Robert Bagshaw . .	29, Great George Street, S.W.
1886	Martin, Heber Gambling .	Highfield House, Littleport.
1885	Mathews, John Mathews . .	Home Lodge, 58, Kent House Road, Sydenham, S.E.
1886	Melrose, Frank	Heslington, York.
1886	Michelmore, Herbert . .	Berry Pomeroy, Totnes, Devon.
1885	Newton, Frederick James Campbell.	Vassall Lodge, Addison Road, Kensington, W.
1885	Nicholson, Ebenezer . . .	Trentham House, Darnley Road, Hackney.
1885	Nockolds, Martin Charles Hubert	Ri Cruin, Lochgilphead, N.B.
1886	Oakley, John Hubert. . .	Cromlix, Chislehurst.
1885	Parry, Richard	Midlothian Cottage, Woodford Green, Essex.
1885	Paterson, Herbert. . . .	Carlton Road, Whalley Range, Manchester.

Passed Preliminary Examination.	STUDENTS.	
1884	PERKINS, WALTER FRANK . .	Portswood House, Southampton.
1884	PHILLIPS, WILLIAM DEARLOVE .	High Street, High Wycombe, Bucks.
1884	PHYSICK, WALTER FREDERICK .	136, Marylebone Road, N.W.
1884	PUCKRIDGE, PERCIVAL MARTIN .	6, Terrace Walks, Bath.
1885	ROBINSON, ALFRED WHITMORE .	Epperstone, Nottingham.
1886	SAUNDERS, CHARLES HERBERT.	24, Westbourne Park Road, Bayswater, W.
1885	SELBY, FRANK	19, Hugh Street, Eccleston Square, S.W.
1885	SMURTHWAITE, WILLIAM JOHN .	Millfield House, Cheriton Gardens, Folkestone, Kent.
1886	STAINTON, FRANCIS CHARLES .	69, Ondine Road, East Dulwich, S.E.
1886	TILLY, HUBERT DOUGLAS . .	9, Crauford Rise, Maidenhead, Berks.
1884	TURNER, PERCY	7, Lower Brook Street, Ipswich.
1886	TYLER, JAMES WILLIAM . .	Elm Villa, Trinity Road, Upper Tooting, S.W.
1884	VALE, HENRY	Hartlebury, near Kidderminster.
1885	VARLEY, THOMAS ERNEST . .	48, Elgin Crescent, Notting Hill, W.
1884	WARTON, WILFRED	13, North Audley Street, W.
1886	WATNEY, DENDY.	Burleigh Lodge, Bedford Park, Croydon.
1886	WATSON, RICHARD	Plymouth Road, Totnes, Devon.
1885	WEBB, FREDERIC NOEL. . .	Melton Constable, East Dereham, Norfolk.
1884	WHALLEY, FREDERICK HERBERT	Ashfield House, Chester.
1886	WHEELER, CHARLES TREVOR OGLE	186, Earl's Court Road, South Kensington.
1886	WILSON, WILLIAM EDWARD .	1, Hanover Square, Higher Broughton, Manchester.
1886	WORDLEY, ALEXANDER GEORGE	15, Bartholomew Road, Camden Town, N.W.

NOTE.—To ensure the regular transmission of the Papers and Notices, it is particularly requested that any changes of address be communicated at once to the Secretary.

Members of the Institution who have Passed the Qualifying Examination.

As Fellows—

*Bedells, Charles Herbert	6, John Street, Bedford Row, W.C.
Bontor, Frank Arthur	29, Fleet Street, E.C.
*Day, William	23, High Street, Maidstone, Kent.
Dickson, Thomas Arthur	West Cliff, Preston, Lancashire.
Godfrey, Robert	Valentine Road, King's Heath, near Birmingham.
*Hasluck, Lancelot Gerald	Green Hill Park, near Barnet, Herts.
Horne, William Edgar	Basinghall Street, E.C.
Johnson, Henry	37, Walbrook, E.C.
*Jones, Henry Arthur	53, Maida Vale, W.
Michelmore, Alfred	Berry House, Totnes, Devon.
*Moore, Harold Edward	1, Essex Street, Strand, W.C.
North, George Frederic	Wroxton Estate Office, near Banbury, Oxon.
*Pain, James	Borough, Micheldever, Hants.
*Paull, Alan	50, Highgate Road, N.W.
Peto, James Winder	10, Market Square, Bromley, Kent.
*Pilditch, Philip Edward	17, Parliament Street, S.W.
*Rolleston, William Gustavus Stanhope	Grey Friars, Leicester.
Silcock, Thomas Ball	14, Abbey Churchyard, Bath.
Smith, William	Rushford, Evesham, Worcestershire.
Tarrant, Walter	9, Dalberg Road, Brixton, S.W.
*Treadwell, Henry John	5, Agar Street, Strand, W.C.
Vernon, Arthur	Borshams, High Wycombe, Bucks.
Vernon, Walter Liberty	4, Trinity Street, Hastings.

As Professional Associates—

Arch, Arthur Joseph Edwin	Minas de Rio Tinto, Huelva, Spain.
Arnott, John	Church Street, Woodbridge, Suffolk.
Baker, Cecil Cautley	22, Great George Street, S.W.
Barratt, Harry	Middle Street, Stourbridge, Worcestershire.
Beard, Edwin Thomas	3, St. Catherine's, Lincoln.
Bedells, Charles Herbert	6, John Street, Bedford Row, W.C.
Benson, Robert Alan	112, Abbey Foregate, Shrewsbury.
Blundell, Harry	Cauldon Place, Shelton, Stoke-upon-Trent.
Buckland, Alfred Virgoe	66, Cannon Street, E.C.
Coales, Herbert George	Beechwood, Newport Pagnell, Bucks.

**Those Members to whose names a star is affixed have passed the Fellowship Examination, but are not yet of the age to be transferred to the Class.*

Professional Associates—continued.

Collins, Marcus E.	61, Old Broad Street, E.C.
Crawter, John, Jun.	4, Great James Street, Bedford Row, W.C.
Day, William	23, High Street, Maidstone, Kent.
Dunning, Bernard Simon . .	41, Claverton Street, S.W.
Eiloart, Alfred	40, Chancery Lane, W.C.
Gibbon, William Jacomb . .	3, Verulam Buildings, Gray's Inn, W.C.
Greenop, Edward	74, Bonham Road, Brixton Rise, S.W.
Halkyard, William Redford .	The Firs, Knutsford.
Hall, William Timothy . .	Uppington, Wellington, Salop.
Hasluck, Lancelot Gerald .	Green Hill Park, New Barnet, Herts.
Hebblethwaite, Charles Henry	1, Norfolk Place, Halifax, Yorkshire.
Hilliard, George Edward .	Chelmsford, Essex.
Jones, Henry Arthur . . .	53, Maida Vale, W.
Jull, William Vincent . .	Wrotham Lodge, Streatham Hill, S.W.
Maddox, Charles Ralph . .	20, Baker Street, W.
Massie, Frank	St. Paul's Chambers, Sheffield.
Mead, John Henry . . .	9, Whitehall Place, S.W.
Mixer, Edward	80, Cheapside, E.C.
Moore, Harold Edward . .	1, Essex Street, Strand, W.C.
Moyes, John Helenus . . .	26, Trinity Street, Cambridge.
Pain, James	Borough, Micheldever, Hants.
Paull, Alan	50, Highgate Road, N.W.
Petre, Robert George . .	9, Whitehall Place, S.W.
Pilditch, Philip Edward . .	17, Parliament Street, S.W.
Rand, John	Walton House, Grove Hill, Dulwich, S.E.
Rolleston, William Gustavus Stanhope.	Grey Friars, Leicester.
Rundle, Edward Collins . .	Bedford Office, Tavistock, Devon.
Sadler, George William, Jun.	Keynsham Villa, Cheltenham.
Satchell, Charles	Alexandria, Egypt.
Selby, John Basely . . .	Atherton Old Hall, Leigh, Manchester.
Sturge, Theodore	34, Corn Street, Bristol.
Sturgess, John Moore . .	Penshurst Park, near Tunbridge, Kent.
Tiffen, John Henry . . .	Conservancy Buildings, Hull.
Treadwell, Henry John . .	5, Agar Street, Strand, W.C.
Watson, James Bruce . . .	Place Farm, Doddinghurst, Brentwood, Essex.
Watson, John, Jun.	Estate Office, Shirburn, Tetsworth, Oxon.
Webb, Jonas Marshall . .	7, Prince's Street, Hanover Square, W.
Willard, Thomas	Estate Office, L. & N. W. Ry., Euston Station, N.W.
Williams, Sidney	1, Essex Street, Strand. W.C.

Members Transferred during the Year 1885 from the Class of Professional Associates to that of

Fellows—

Dickson, Thomas Arthur	West Cliff, Preston.
Grant, James	Llanidloes, Montgomeryshire.
Johnson, Henry	37, Walbrook, E.C.
Tewson, Edward Arthur	80, Cheapside, E.C.
Vigers, Martin	52, Queen Victoria Street, E.C.

Members who Died during the Year 1885.

Fellows—

David, Edward	Llandaff.
Dew, William	Carnarvon.
Foster, Henry Pafoot	5, John Street, Adelphi.
Harding, William Daniel, Sen.	16, St. Paul's Churchyard, E.C.
Harvey, Richard Hart	Haverfordwest.
Horwood, James	10, Paternoster Row, E.C.
Humbert, Charles F.	Watford.
Robson, Henry	Durham.
Stephenson, Charles	45, Parliament Street, S.W.
Sworder, George Edward	Bishop's Stortford.
Thompson, Charles William	Guildhall, E.C.
Trist, George	62, Old Broad Street, E.C.
Whichcord, John	Palace Chambers, S.W.

Professional Associates—

Attenborough, Alfred	Lydenburgh, Transvaal.
Beck, T. Coker	Basingstoke, Hants.
Knollys, Edward Holdsworth	Taunton.

Associates—

Kingsford, Douglas	Temple, E.C.
Turner, Francis	Temple, E.C.

Local Distribution of Members.

BEDFORDSHIRE.

BEDFORD.

Fellows :—

Eve: John Richard.
Stafford: Robert Barry.
Yeoman: George Dundas.

Professional Associates :—

Fenning: Herbert Samuel.
Weston: Joseph Aurelius.

SILSOE.

Fellow :—

Trethewy: Henry.

WOBURN.

Professional Associate :—

Benson: Thomas.

BERKSHIRE.

ASCOT.

Fellows :—

Franklin: Thomas.
Franklin: William Taylor.

FARINGDON.

Fellow :—

Barfield: Frederic Henry.

NEWBURY.

Fellow :—

Neate: Arthur Webb.

Professional Associate :—

Few: Harry Garrard.

READING.

Fellows :—

Egginton: John.
Haslam: Dryland.
Shackel: George.
Wing: William.

WALLINGFORD.

Fellow :—

Gale: Joseph John.

Professional Associate :—

Russell: James Elgar.

Associate :—

Wells: Alfred Dodd.

WANTAGE.

Professional Associate :—

Adkin: Charles Duncan.

WOKINGHAM.

Fellow :—

Watts: James.

WINDSOR.

Fellow :—

Buckland: Frank Bowry.

Professional Associate :—

Nottage: William Griggs.

BUCKINGHAMSHIRE.

HIGH WYCOMBE.

Fellow :—

Vernon: Arthur.

Associate :—

Clarke: Daniel.

LEIGHTON BUZZARD.

Professional Associate :—

Bruce: Robert Knight.

MAIDENHEAD.

Fellow :—

Cooper: Arthur Leslie

NEWPORT PAGNELL.

Professional Associate :—

Coales: Herbert George.

STONY STRATFORD.

Fellow :—

Gotto: Frederick Edward.

CAMBRIDGESHIRE.

CAMBRIDGE.

Fellows :—

Grain: Arthur Tress.
Jonas: John Carter.
Long: Edward Walter.
Rowe: Richard Reynolds.
Waters: Frank.

Professional Associates :—

Moyes: John Helenus.
Scammell: Thomas.

ELM.

Professional Associate :—

Catling: Robert Charles.

ELY.

Fellow :—

Bidwell: Charles.

MARCH.

Fellow :—

Little: William Cutlack.

CHESHIRE.

BIRKENHEAD.

Fellow :—

Mills: William Edward.

CHESTER.

Professional Associate :—

Taylor: Edward Sydney.

ECCLESTON.

Professional Associate :—

Parker: The Hon. Cecil Thomas

KNUTSFORD.

Professional Associate :—

Halkyard: William Redford.

NANTWICH.

Professional Associate :—

Homfray: William Francis.

NORTHWICH.

Professional Associate :—

Tarleton: Roger.

CORNWALL.

CAMBORNE.
Fellow: —
Bolden: John Leonard.

CUMBERLAND.

BRAMPTON.
Fellow :—
Stephenson: Christopher.

WHITEHAVEN.
Fellow :—
Hudson: James.
Professional Associate :—
I'Anson: Bryan Walter.

DERBYSHIRE.

BUXTON.
Fellow :—
Hubbersty: Henry Alfred.

CHESTERFIELD.
Fellows :—
Jeudwine: William Wynne.
Martin: Gilson.
Professional Associate :—
Thorpe: Christopher.

DERBY.
Fellows :—
Bower: William John.
Gratton: John Sterland.
Parkin: John Robert.
Popplewell: William Willott.
Shaw: John.
Wright: James.
Professional Associates :—
Fuller: Thomas Alfred.
McCallum: Peter Service.
Shaw: John, Jun.
Associate :—
Strutt: Frederick, The Hon.

SUDBURY.
Fellow :—
Fawkes: Algernon.

DEVONSHIRE.

BARNSTAPLE.
Fellow :—
Brown: George.

BIDEFORD.
Fellow :—
Cooper: John Groves.

BROAD-CLYST.
Associate :—
Acland: Sir Thomas Dyke, Bart., M.P.

EXETER.
Fellows: —
Drew: Henry.
Drew: John.
Dymond: Francis Williams.
Martin: John May.
Ware: Charles Edwin.
Professional Associate :—
Drew: John Gould.

INSTOW.
Fellow :—
Lock: William Henry.

DEVONSHIRE—*continued.*

IVY BRIDGE.
Fellow :—
Elliott: Charles.

LUNDY ISLAND.
Professional Associate :—
Wright: Thomas Hawkins.

NEWTON ABBOT.
Fellow :—
Rendell: Arthur Stephen.

PAIGNTON.
Professional Associate :—
Pridham: John Lawrence.

PLYMOUTH.
Fellows :—
Foster: Joseph Burgess.
Lethbridge: Walter.

OTTERY ST. MARY.
Professional Associate :—
Winder: George Alexander.

TAVISTOCK.
Professional Associate :—
Rundle: Edward Collins.

TOTNES.
Fellow :—
Michelmore: Alfred.
Symons: Philip.

WEMBWORTHY.
Fellow :—
Tanner: James Melhuish.

DORSETSHIRE.

EVERSHOT.
Professional Associate :—
Wells: William Howley.

WEYMOUTH.
Fellow :—
Crickmay: George Rackstrow.

WIMBORNE.
Fellow :—
Turnbull: Thomas John.

DURHAM.

DARLINGTON.
Fellows :—
Dent: Ralph John.
Eade: Arthur Willoughby French.
Minter: William.
Scarth: William T.
Waistell: William.

DURHAM.
Fellow :—
Wall: George Young.
Professional Associate :—
Rolandson: Christopher.

GATESHEAD-ON-TYNE.
Fellow :—
Wallace: Henry.

SEAHAM-HARBOUR.
Fellow :—
Brydon: Robert.

SUNDERLAND.
Fellows :—
Hedley: Thomas Fenwick.
Hedley: Thomas Fenwick, Jun.
Potts: Joseph, Jun.

ESSEX.

BOREHAM.
Professional Associate:—
Moore: Harold Edward.

BRAINTREE.
Fellow:—
Vaizey: John George.

BRENTWOOD.
Professional Associate:—
Watson: James Bruce.

CASTLE HEDINGHAM.
Fellow:—
Balls: James Mayhew.

CHELMSFORD.
Fellows:—
Chancellor: Frederick.
Hilliard: George Bridge.
Professional Associates:—
Christy: Archibald Ernest.
Hilliard: George Edward.
Petre: The Hon. Henry William.
Phillips: George Cawkwell.
Associate:—
Gepp: Charles Bramston Osborne.

CHIGWELL.
Fellow:—
Savill: Alfred.

COLCHESTER.
Professional Associate:—
Grimwade: Henry.

EPPING.
Fellow:—
Sworder: Hugh.

ILFORD.
Professional Associate:—
Thompson: William.

INGATESTONE.
Fellow:—
Coverdale: Frederick John.

RAINHAM.
Fellow:—
Blewitt: Edward Robert.

SAFFRON WALDEN.
Fellow:—
Nockolds: Martin.

SOUTHEND-ON-SEA.
Professional Associate:—
Tapp: Arthur.

WITHAM.
Professional Associate:—
Strutt: The Hon. Edward Gerald.

WOODFORD.
Fellow:—
Kemsley: Joseph William.

GLOUCESTERSHIRE.

BRISTOL.
Fellows:—
Daniel: Harry Augustus Hood.
Munro: Philip.
Sturge: Robert Fowler.
Sturge: William.
Thomas: Josiah.
Professional Associate:—
Sturge: Theodore.

GLOUCESTERSHIRE—*continued.*

CHELTENHAM.
Fellows:—
Cox: George James.
Sadler: George William.
Sanders: Thomas.
Professional Associate:—
Sadler: George William, Jun.

CIRENCESTER.
Fellow:—
Anderson: Robert, Jun.

GLOUCESTER.
Fellow:—
Knowles: William.
Professional Associate:—
Knowles: Henry.

MORETON-IN-THE-MARSH.
Fellow:—
Scovell: John.

STONEHOUSE.
Professional Associate:—
Bailey: Leonard.

WESTON BIRT.
Fellow:—
Rich: Robert.

HAMPSHIRE.

ANDOVER.
Fellows:—
Herbert: Allan.
Westbury: George Henry.
Westbury: Giles.
Professional Associate:—
Hooper: Alfred Frederick.

ALTON.
Fellow:—
Curtis: Charles Edward.

BASINGSTOKE.
Fellow:—
Raynbird: Hugh Edward.
Professional Associate:—
Simmons: Charles Franklin.

EAST TYTHERLEY.
Professional Associate:—
Robey: Robert.

FAREHAM.
Fellow:—
Clarke: Alfred Dudley

FORDINGBRIDGE.
Fellow:—
Hannen: Reginald St. John.

MICHELDEVER.
Professional Associate:—
Pain: James.

PORTSMOUTH.
Fellow:—
King: Thomas.

PORTSEA.
Fellows:—
Blake: Frederick.
Hall: Ernest.
Kent: George Edward.
King: Thomas.
King: William David.

HAMPSHIRE—*continued.*

RINGWOOD.
Fellow :—
Baird : Jonathan Peel.

RYDE.
Fellow :—
Newman : Francis.

SOUTHAMPTON.
Fellows :—
Hill : William Burrough.
Jurd : William.
Lemon : James.
Professional Associate :—
Lomer : Montague Frank.

SOUTHSEA.
Fellows :—
Kent : George Edward.
King : William David.

WEST COWES.
Fellow :—
Bird : James Binfield.

WINCHESTER.
Fellows :—
Comely : John Gill.
Harris : James.
Pickstock : John.
Professional Associate :—
Newton : Thomas Edwin.

WICKHAM.
Fellow :—
Smith : Charles Bovill.

HEREFORDSHIRE.

HEREFORD.
Fellows :—
Apperley : William Havard.
Brown : John Powles.
Haywood : Henry.
Haywood : William Matthews.
Parker : John.
Professional Associate :—
Hewitt : William.

KINGSLAND.
Fellow :—
Ward : John George Rodney.

HERTFORDSHIRE.

BARKWAY.
Fellow :—
Adams : Charles Frederic.
Professional Associate :—
Balding : Albert.

BISHOPS STORTFORD.
Professional Associate :—
Robinson : Martin Catlin

CHESHUNT
Fellow :—
Crawter : John.

HERTFORDSHIRE—*continued.*

HEMEL HEMPSTEAD.
Fellow :—
Robinson : Nathaniel Wishart.

HERTFORD.
Fellow :—
Austin : Russell Gardiner.
Professional Associate :—
Shoppee : Conrad Joseph.

NEW BARNET.
Professional Associate :—
Hasluck : Lancelot Gerald.

ROYSTON.
Professional Associate :—
Thurnall : John Edward.

SAWBRIDGEWORTH.
Professional Associate :—
Crawley : William Jeeves.

ST. ALBANS.
Fellow :—
Harding : Sidney Longhurst.
Professional Associate :—
Low : Robert John.

TRING.
Fellows :—
Brown : William.
Foulkes : Septimus Giffard.

WARE.
Fellow :—
Beningfield : Henry.

WATFORD.
Fellow :—
Weall : John.
Professional Associates :—
Ayres : Charles Pryor.
Norris : Walter Henry.
Associate :—
Thomas : Hubert.

HUNTINGDONSHIRE.

HUNTINGDON.
Fellow :—
Looker : John.

LOLWORTH-BY-ST. IVES.
Fellow :—
Daintree : John Osborn.

ST. NEOTS.
Fellow :—
Peppercorn : John Hutchinson.

KENT.

ASHFORD.
Fellows :—
Ballard : Edmund.
Waterman : James.
Professional Associates :—
Brown : Alexander
Reid : Francis.

KENT—*continued.*

AYLESFORD.
Fellow :—
Seymour: Richard Arthur Hamilton.

BENENDEN.
Fellow :—
Neve: Herbert.

BEXLEY.
Fellow :—
Dann: Henry.

BROMLEY.
Fellows :—
Lepper: John Harrage.
Payne: Frederick.
Peto: James Winder.

CANTERBURY.
Fellow :—
Slater: George.
Professional Associate :—
Harvey: John James Sayer.

DOVER.
Fellows :—
Fry: George Frederick.
Hayward: Henry.

FARNINGHAM.
Professional Associate :—
Hodsoll: William, Jun.

FAVERSHAM.
Fellow :—
Neame: Frederick, Jun.

FOLKESTONE.
Professional Associate :—
Flint: Leslie Sentance.

HIGHAM.
Fellows :—
Cobb: Robert Lake,
Member of Council.
Cobb: Herbert Mansfield.

LITTLE MONGEHAM.
Fellow :—
Wilks: Richard.

MAIDSTONE.
Fellows :—
Tootell: Charles.
Tootell: Joseph.
Tootell: Joseph, Jun.
Troutbeck: Robert.
Waterman: Richard.
Professional Associate :—
Day: William.

PLUCKLEY.
Fellow :—
Burrows: Alfred Joe.

SEVENOAKS.
Fellows :—
Cronk: Edwyn Evans.
Cronk: Frank.
Cronk: William Henry.

SITTINGBOURNE.
Fellow :—
Webb: George.
Professional Associate :—
Cowper: Richard William.

KENT—*continued.*

TUNBRIDGE.
Professional Associate :—
Sturgess: John Moore.

TUNBRIDGE WELLS.
Fellows :—
Brackett: William.
Langridge: George.
Professional Associates :—
Freeman: Sydney.
Roper: William.

LANCASHIRE.

ASHTON-UNDER-LYNE.
Fellow :—
Holmes: James.

BLACKBURN.
Fellows :—
Bertwistle: James.
McCall: George.

BURY.
Fellow :—
Farrar: James.

LIVERPOOL.
Fellows :—
Fain: Coard Squarey.
Sherlock: Cornelius.
Associate :—
King: William.

LEIGH.
Professional Associate :—
Selby: John Basely.

LYTHAM.
Fellow :—
Fair: Thomas.

MANCHESTER.
Fellows :—
Bridgford: Robert, C.B.
Cross: John.
Holden: John.
Jackson: Charles.
Nevile: Henry William.
Raby: Joseph Walker.
Raby: William.
Statter: Thomas.
Thompson: Edward James.
Wilson: Thomas Silk.
Associate :—
Higgin: William Housman, Q.C.

PRESTON.
Fellows :—
Dickson: Thomas Arthur.
Fair: Jacob Wilson.
Harding: Joseph.
Park: William Philip.
Veevers: Richard.

LANCASHIRE—*continued.*

ST. HELEN'S.

Fellow :—

Hanson : Amos.

Professional Associate :—

Booth : John Frederick.

WARRINGTON.

Fellow :—

White : John.

LEICESTERSHIRE.

ASHBY-DE-LA-ZOUCH.

Fellows :—

German : George.
German : John.

HINCHLEY.

Fellow :—

Thorpe : William.

LEICESTER.

Fellows :—

Clough-Taylor : Horace George.
Draper : Arthur Thomas.
Rolleston : John Fowke Lancelot.

Professional Associate :—

Rolleston : Wm. Gustavus Stanhope.

LOUGHBOROUGH.

Fellows :—

Hodson : George.
Woolley : William Edward.

Professional Associate :—

Holbeche : Æmilian Henry.

MARKET HARBOROUGH.

Professional Associate :—

Fisher : Charles Browning.

QUORNDON.

Professional Associate :—

Martin : Charles William.

WOODHOUSE.

Fellow :—

Humphreys : Henry.

LINCOLNSHIRE.

ALFORD.

Fellow :—

Higgins : Frederic

BRIGG.

Fellow :—

Cave : Henry H.

LINCOLN.

Professional Associate :—

Beard : Edwin Thomas.

LOUTH.

Fellow :—

Mason : William Ludlam.

SPALDING.

Fellow :—

Kingston : Samuel

LINCOLNSHIRE—*continued.*

ULCEBY.

Fellow :—

Turner : John.

WAINFLEET.

Fellows :—

Martin : James,
Member of Council.
Martin : Walter.

LONDON AND NEIGHBOURHOOD.

Fellows :—

Adams : Charles Frederick.
Adams : Henry.
Allen : Henry Robert.
Arding : Charles Bennett.
Barry : Charles.
Bate : Thomas.
Beadel : William James,
President.
Bedells : Charles King.
Beeston : Frederick.
Bell : George Graham.
Beningfield : Henry.
Berridge : Robert.
Bickerton : George Arthur.
Bingham : Reuben.
Bird : James Binfield.
Bird : Walter.
Birdseye : William.
Blake : William John, Jun.
Blakemore : William Agutter.
Blashill : Thomas.
Bolam : Charles Godfrey.
Bond : Erasmus.
Bonny : James Rippoth.
Bontor : Frank Arthur.
Booker : Algernon Erskine.
Boyle : Edward.
Bray : Harry.
Brereton : Franc Sadleir.
Brinsley : George.
Bridgewater : Bentley James.
Brown : Bradshaw.
Brown : Daniel Johnson.
Brown : George James.
Brown : William Blumfield.
Burbidge : Samuel.
Burnell : Edward Henry.
Burnett : David.
Burroughes : Thomas Henry
Buzzard : Alfred Lindsey.
Carritt : Ernest.
Carpenter : Evan George.
Cartwright : George Kingsford.
Cassell : James Robert.
Castle : Henry James, Sen.,
Member of Council.
Castle : Henry James, Jun.
Castle : William Henry Baldwin.
Cates : Arthur.
Chadwick : Spencer.
Chancellor : Frederick.
Chapman : George.
Chesterton : Edward.
Cheston : Chester.
Chinnock : Frederick George.
Clark : Samuel.
Clarke : Howard Chatfeild.
Clarke : Thomas Chatfeild,
Member of Council.

LONDON AND NEIGHBOURHOOD—*continued.*

Fellows:—

Clifton: Edward Norton.
Clutton: Henry.
Clutton: John.
Clutton: John Henry.
Clutton: Ralph.
Clutton: Robert George,
Member of Council.
Cobb: Herbert Mansfield.
Cobb: Robert Lake,
Member of Council.
Collins: Henry Hyman.
Cook: Edward Samuel.
Cooper: John Thomas.
Crickmay: George Rackstrow.
Cronk: Edwyn Evans.
Cronk: Frank.
Cross: William Stephens.
Currey: Henry.
Curtis: Robert Leabon.
Curtis: Samuel Perkins.

Dale: John.
Dallas: Edwin Stuart.
Dash: Thomas Alexis.
Davis: James.
Daw: William Herbert.
Deacon: Thomas Mark.
Debenham: Thomas Nunn.
Dennant: William Freeth.
Denton: John Bailey.
Dinwiddy: Thomas.
Doll: Charles Fitzroy.
Dowden: Henry Joseph.
Dowling: Clement.
Downing: Frederick.
Driver: Charles William.
Driver: Robert Collier,
Vice-President.
Driver: Robert Manning.
Drury: Edward Dru.
Dunch: Charles.
Dunlop: Alexander Milne,
Member of Council.
Dyer: William John.

Eales: Frederick Ernest.
Eiloart: Frederick Edward.
Ellis: Henry.
Ellis: Richard Adam.
Ellis: Sir John Whittaker, Bart., M.P.
Emmanuel: Barrow.
Eve: William.
Eves: George.

Farmer: Edmund.
Field: James Frederick.
Field: Walter William.
Fleetwood: George.
Foster: Charles Rolls
Fuller: Ernest.
Fuller: Harry.
Furber: Herbert.
Furber: William.

Gairdner: Edward James.
Galsworthy: Frederick Thomas.
Gardiner: Edward James.
Gardiner: William James.
Garrard: Arthur.
Gilbert: William Henry Sainsbury.
Girdwood: James.
Glasier: George Henry Brougham.
Goodchild: Josiah.

LONDON AND NEIGHBOURHOOD—*continued.*

Fellows:—

Gore: Spencer W.
Goulding: William Purdham.
Graves: Walter.
Green: Samuel.
Green: James.
Grellier, Harley Mair.
Grey: Charles Grey.
Gwyther: William Warlow.

Haddock: Roland.
Hall: John George.
Hall: Walter.
Hallett: William Brown.
Hamilton: Henry.
Hardcastle: Fredk. Henry Appleton.
Harding: Edward Ernest.
Harding: William Daniel.
Harman: James Ambrose.
Harrington: George Frederick.
Hart: William Frederick.
Haywood: William, Lieut.-Colonel.
Heron: William Charles.
Hine: George Ernest.
Hobson: Frederick William.
Horne: William Edgar.
Horsey: Frederick.
Horsey: Thomas.
Hovenden: Thomas Henry.
Hudson: Arthur Byrne.
Hudson: William.
Hull: Charles.
Humphreys: Charles.
Hunt: Sir Henry Arthur, C.B.
Hunt: Henry Arthur, Jun.
Hunt: Josiah.
I'Anson: Edward.
I'Anson: Edward Blakeway.
Inman: Marshall Nisbet.

Jenkinson: William Wilberforce.
Johnson: Henry.
Jonas: Henry.
Jones: Charles.
Jones: Charles Frederick.
Jones: Charles Jenkin.

Kedgley: Charles.
Keeling: Bassett.
Keirle: Robert.

Lambert: William.
Lansdown: George.
Leane: George Henry.
Lee: Charles Williams.
Lee: Frederick.
Le Rossignol: Frances.
Lewis: Francis Theodore.
Lightfoot: Francis Lowry.
Lofts: Henry.
Lovejoy: Alfred.
Lowe: Charles Harlowe.
Lye: John Gaunt.

Mann: Charles John.
Mann: Robert Wilks.
Marr: James.
Martin: George Dennis.
Martin: Henry Osborne.
Martin: Howard.
Masterman: George Hughes.
Mathews: Joseph Douglas.
Matthews: William.
Maylard: Charles Grason.
Maynard: Edward.

LONDON AND NEIGHBOURHOOD—*continued.*

Fellows :—

Millar : Charles William.
Monier-Williams : Stanley Faithfull.
Morris : John Warrington.
Mortimer : John Camden.
Mullett : Frederick Augustus.

Naylor : Arthur Millington.
Newmarch : Henry Charles.
Newman : Arthur Harrison.
Newson : Harry Carss.
Nichols : Daniel Cubitt.
Nixon : Thomas.
Norman : James Maurice.
Norman : William.
North : George.
Notley : Richard Albert.
Notley : Robert Pledge.

Oakley : Christopher,
Member of Council.
Oakley : William.
Oborne : Alfred William.
Orgill : John Berwick.
Osborn : Richard.

Page : Robert.
Palmer : Alfred.
Parr : Samuel.
Pattisson : Jacob Luard.
Payne : Alexander.
Peck : William Roland.
Peebles : Alexander.
Penfold : John Wornham.
Pollard : Harry Emans.
Popplewell : William Willott.
Porter : Alfred.
Pownall : George Harry.

Read : George Huntly.
Reddall : David Gadsden.
Rees : William Andrew.
Reeves : Benjamin Austen.
Reid : Patrick Sandeman.
Rex : William.
Richards : Alfred.
Richards : Henry Brinley.
Rickman : Thomas Miller,
Member of Council.
Riddle : Frederick Henry Brimble.
Roberts : Richard.
Robins : Edward Cookworthy.
Robinson : Henry.
Robson : Edward Robert.
Rogers : Edward Phippard George.
Rogers : William Bennett.
Rushworth : Edmund Walter.
Rutley : Charles.
Ryde : Arthur Lyon.
Ryde : Edward.

St. Quintin : Perry.
Sanday : George Henry.
Saunders : Cecil George.
Saunders : Edward.
Savill : Alfred.
Searle : Francis William.
Selby : Charles Frederic.
Sherrin : John Lester.
Shoppee : Charles Herbert.
Shoppee : Charles John,
Vice-President.
Simms : Walter.
Smallpeice : George Baker.
Smith : Charles John.

LONDON AND NEIGHBOURHOOD—*continued.*

Fellows :—

Smith : Henry.
Smith : Henry Herbert.
Southwell : Charles Josiah.
Squarey : Elias Pitts,
Vice-President.
Squire : Richard.
Stanger : Caleb.
Stenning : Alexander Rose.
Stephenson : Charles William.
Stevens : William Charles.
Steward : Herbert Thomas.
Stock : Henry.
Stoner : Alfred.
Strudwick : Hayward James.
Strudwick : William Henry.

Tanner : Henry.
Tarrant : Walter.
Tatham : George Henry.
Tewson : Edward.
Tewson : Edward Arthur.
Theobald : Henry Wells Dewhurst.
Thompson : Arthur Edward.
Thurgood : Herbert John.
Thynne : Edward Lewis.
Thynne : Frederick George.
Thynne : Guy Harry.
Tolley : James.
Tootell : Richard William.
Trist : John William.
Trollope : Charles Brown.
Trumper : Richard.
Tuckett : Philip Debell.
Tunley : George.

Vaizey : John George.
Venables : Frederick.
Vernon : Arthur.
Vernon : Walter Liberty.
Vigers : Astley.
Vigers : Edward.
Vigers : Francis.
Vigers : Leslie Robert.
Vigers : Martin.
Vigers : Robert,
Member of Council.
Vulliamy : George.

Walker : Edward Robinson.
Walker : Samuel.
Walmisley : Arthur Thomas.
Warner : William Henry.
Watney : Daniel,
Member of Council.
Watts : Charles.
Weatherall : Henry.
Weaver : William.
Wharton : Thomas George.
Whitaker : George.
Whiteley : Charles Percy.
Widnell : Frederick Grainger.
Wilkinson : George Ayscough.
Wilkinson : William.
Williams : George Barnes.
Williams : Thomas.
Wilson : Jacob.
Withall : Richard Augustus.
Woods : Henry.
Woodthorpe : Edmund.

Professional Associates :—

Badcock : Philip.
Baker : Cecil Cautley.

LONDON AND NEIGHBOURHOOD—*continued.*

Professional Associates:—

Ballard: William Washington.
Beadel: Henry Grant.
Beauchamp: Charles Davie.
Bedells: Charles Herbert.
Bidwell: Shelford.
Bishop: Reginald George.
Boodle: Francis Edward.
Bradley: William.
Brown: William Arthur.
Browne: Flint.
Buckland: Alfred Virgoe.
Buckland: William Thomas.

Cardall: Frederic William.
Castle: Sydney Charles Courtenay.
Chapman: Vaughan Godfrey St. John.
Chester: William Richard.
Clark: Harding Thomas.
Clarke: Percy Henry.
Clayden: Walter.
Clifton: William Edward.
Collins: Marcus E.
Connelly: John Joseph.
Cooke: William George.
Cooke: William Stephen.
Crawter: John, Jun.
Cresswell: John Theodore Ross.
Cross: John.
Cudlipp: William.
Cumberbatch: Carlton Parry.

Daffarn: Thomas Alfred.
Dansie: Frederick Crown.
Dash: Roland Ashford.
Davis: Charles James.
Dawson: Henry Aufrere.
Dawson: Walter Henry.
Drew: Allen.
Dunning: Bernard Simon.

Easton: Edward.
Eiloart: Alfred.
Ellis: Charles Godwin.
Ellis: Edward Felix.
Ellis: Leonard Ashby.
Elwell: William Henry.
Evans: Tom Augustus John.

Fawcett: James Pogue.
Fitness: John Francis.
Fletcher: George Rivers.
Flint: William Hurst.
Fuller: George John.
Fuller: Herbert Henry.
Furber: Henry Aubrey.
Fyfe: George Peters Collier.

Gibb: Willium Pashley.
Gibbon: William Jacomb.
Gibson: Walter Matthew.
Gore: William Joll.
Gow: James.
Grant: Harry Græme.
Green: James Henry Townsend.
Greenop Edward.

Hamilton: John Paynter.
Hansell: Reginald Goddard.
Harland: Arthur.
Harper: Edgar Josiah.
Hebden: George Radcliffe.
Hedger: Arthur Constantine.
Henderson: Henry Arthur.
Henry: Edward Hugh.
Hicks: Stanley.

LONDON AND NEIGHBOURHOOD—*continued.*

Professional Associates:—

Holland: Thomas James, Jun.
Holmes: James Thomas.
Hope: William Elliott.
Hopkins: Edwin.
Howell: Ernest John.
Hussey: George Henry Cleland.

Ingleby: Herbert.
Ingram: Henry Law.

Jessett: Charles.
Jones: Henry Arthur.
Jones: Thomas.
Johnston: Andrew.
Jordan: George Henry.
Jull: William Vincent.

Keeling: Gilbert.
Keer: William.
Kettle: Frederick Charles.
King: Alfred.

Lawrence: William Robert.
Leonard: Henry Holmes.
Lightfoot: John George.
Lofts: Henry Fairlam.
Lovesay: William.
Lucas: Joseph.
Lynch: James Henry.

Maddox: Charles Ralph.
Marriott: George Wharton.
Mead: John Henry.
Merrett: James.
Meston: Joseph Fyfe.
Milnes: Robert, Jun.
Mixer: Edward.
Moore: Harold Edward.
Moss: Thomas Walter.
Mylne: William John Home.

Newman: Charles Henry.
Nixon: Samuel.
Norris: Edward James.

Page: Thomas Gowland.
Paull: Alan.
Payne: William Seth Robert.
Pearce: Frederick William.
Pearce: William John.
Perrers: Harry Wilson.
Petre: Robert George.
Pewtress: Herbert Wilmshurst.
Phillips: John Henry.
Pilditch: Philip Edward.
Price: Thomas William.
Purchase: Edward Keynes.

Rand: John.
Rex: Charles William.
Rex: Francis Herbert.
Rigden: Charles Furner.
Roberts: Charles.
Roberts: Charles Gordon.
Robinson: James Thomas.
Ross: David James.
Rüntz: Ernest Augustus.
Ryde: Charles Bertram.

Sabin: Joseph Henry.
St. Quintin: Richard Samuel.
Saunders: Samuel Brown.
Savill: Alfred, Jun.
Sexby: John James.
Shackle: Edward Neild.
Sherry: Nathaniel.

LONDON AND NEIGHBOURHOOD—*continued.*

Professional Associates :—

Sherwin: Joseph Henry.
Skewis: Edwin.
Skingle: Alfred.
Slade: Isaac.
Smith: George Cecil.
Smyth: Edward,
Professional Associate of Council.
Stacey: William.
Stenning: Percy Haines.
Stevenson: Frederick J.
Stower: Joseph.
Swinscow: Harold Edwin.

Tapp: Arthur.
Taylor: George.
Theobald: Henry.
Thompson: Alfred.
Thurgood: Ernest Charles.
Treadwell: Henry John.
Trollope: Henry Charles.
Trumper: John Alfred.

Vigers: Sidney.

Wakefield: Godfrey.
Walker: Leon Victor.
Wallis: John David.
Ward: George.
Waters: William Richard.
Watney: Walter Daniel.
Webb: Jonas Marshall.
Wells: Edward Ogbourn.
Weston: George.
Wilcocks: Frederick C.
Wiles: William.
Willard: Thomas.
Williams: Leonard James.
Williams: Sidney.
Williams: Tom.
Willoughby: Charles William.
Wood: Henry.
Woodward: William.
Wreathall: Robert T.
Wyand: Benjamin John.

Young: Andrew.
Young: Morgan Henry.

Associates :—

Anderson: Charles Henry.

Bankes: John Eldon.
Barry: John Wolfe,
Associate of Council.
Batten: John Winterbotham.
Bazalgette: Charles Norman.
Beale: James Samuel.
Bidder: George Parker, Q.C.
Birch: Robert William Peregrine.
Bolton: William Henry.
Bramwell: Sir Fredk. Joseph, F.R.S.
Bund: John W. Willis.

Carlisle: William Thomas.
Castle: Edward James.
Clarke: Edward, Q.C., M.P.
Clode: Walter.
Cripps: Charles Alfred.

Day: William Ansell.
Dethridge: Frank.
Druce: Samuel Benjamin Large.

Fowler Sir John.
Freeman: George Mallows.

LONDON AND NEIGHBOURHOOD—*continued.*

Associates :—

Freshfield: Edwin.
Freshfield: William Dawes.

Gedge: Sydney.
Goldney: Gabriel Prior.
Grantham: Richard Boxall.
Grantham: Richard Fuge.
Groves: William.
Gully: William Court, Q.C.

Halsey: Edward Joseph.
Hamilton: Henry Best Hans.
Hamond: Thomas Astley Horace.
Harris: Richard Reader.
Hill: Alexander Staveley, Q.C., M.P.

James: Sir Henry, Q.C., M.P.

Kirby: Alfred Octavius.

Ledgard: Frederick Thomas Durell.
Littler: Ralph Daniel Makinson, Q.C.
Lott: Joseph.

Marriott: The Right Hon. William Thackery, Q.C., M.P.
Meysey-Thompson: Albert Childers.
Michael: William Henry, Q.C.
Mosley: Tonman.
Munton: Francis Kerridge.

Philbrick: Frederick Adolphus, Q.C.
Pope: Samuel, Q.C.
Procter: Foster Wilfred.

Quick: Joseph.

Rees: John Charles.
Rickards: Arthur George.
Rigg: Herbert Addington.
Ryde: Edward Harrow.
Ryde: Walter Cranley.
Shoppee: Gerald Augustine.
Sladen: St. Barbe.
Smith: John Smalman.
Smith: Lumley, Q.C.
Statham: William Arnold.
Stephens: Pembroke S., Q.C.
Stevens: William Richard.
Stevenson: George Wilson.
Sutton: Henry.

Trollope: George Francis.

Warren: Reginald Augustus.
Webster: Sir Rchd. Everard, Q.C., M.P.,
Associate of Council.
Wheeler: Thomas Whittenbury.
White: Frederick Meadows, Q.C.
White: Thomas Jennings.
Will: John Shiress, Q.C., M.P.
Winckworth: Lewis.
Wing: Thomas Twining.
Woolf: Sidney.

MONMOUTHSHIRE.

NEWPORT.

Fellows :—

Graham: William.
Hitchcox: William.
Rees: William George.

Professional Assiciates :—

Keates: William Allen.
Tanner: William.

NORFOLK.

COSSEY.

Fellow :—

Coverdale: Henry.

EAST DEREHAM.

Fellow :—

Shellabear: Samuel.

EAST RAYNHAM.

Professional Associate :—

Gayford: Henry John.

KING'S LYNN.

Fellow :—

Wright: William Edward.

Professional Associate :—

Hussey: Robert.

NORWICH.

Fellows :—

Mills: Samuel Mealing.
Rogers: Ernest Edward.

SANDRINGHAM.

Fellow :—

Beck: Edmund.

SCOLE.

Professional Associate :—

Scriven: Charles Herbert.

SWAFFHAM.

Fellow :—

Freuer: William.

THETFORD.

Fellow :—

Barker: Caleb.

WOODBASTWICK.

Professional Associate :—

Crofts: Ewan Nevile.

NORTHAMPTONSHIRE.

NORTHAMPTON.

Fellow :—

Law: Edmund.

OUNDLE.

Fellow :—

Parnell: Robert.

PETERBOROUGH.

Fellows :—

Edwardes: Charles Bidwell.
Laurance: John.

Professional Associate :—

Lyster: Thomas Rice Somerville.

NORTHUMBERLAND.

ALNWICK.

Fellow :—

Wilson; Jacob.

NORTHUMBERLAND—*continued.*

NEWCASTLE-UPON-TYNE.

Fellows :—

Armstrong: Thomas John.
Bolam: William Thomas.
Parmeter: Frank.

Professional Associate :—

Taylor: John William.

NOTTINGHAMSHIRE.

EAST BRIDGFORD.

Fellow :—

Beaumont: George.

EPPERSTONE.

Fellows :—

Huskinson: Thomas.
Huskinson: William Lambe.

Professional Associate :—

Huskinson: Thomas William.

MANSFIELD.

Fellows :—

Neale: Charles James.
Turner: Frederick John.

Professional Associate :—

Butterworth: Josiah.

NOTTINGHAM.

Fellows :—

Barnes: John William James.
Evans: Robert.
Hine: George Thomas.
Jackson: Frederick.
Walker: Herbert.

Professional Associate :—

Payne: William Percy.

SOUTH COLLINGHAM.

Fellows :—

Wigram: John.
Woolley: Reginald.
Woolley: Thomas Cecil Smith.
Woolley: Thomas Smith.

WOLLATON.

Fellow :—

Wright: William.

Professional Associate :—

Hall: Charles Pell.

OXFORDSHIRE.

BANBURY.

Fellow :—

North: George Frederic.

BICESTER.

Fellows :—

Castle: George Richard.
Holiday: Frederick Dean.
Paxton: Edward Hayton.

Professional Associate :—

Little: William Davis.

CHARLBURY.

Fellow :—

Birkett; William.

OXFORDSHIRE—*continued.*

HENLEY-ON-THAMES.

Professional Associates :—

Simmons: Charles Franklin.
Simmons: William Anker.

KIRTLINGTON.

Professional Associate :—

Dashwood: Frederick Loftus.

OXFORD.

Fellows :—

Castle: Robert.
Egerton: Hubert Decimus.
Field: Francis Hayward.
Galpin: Charles Alexander.
Galpin: John.

Professional Associate :—

Rose: Edward Joseph.

TETSWORTH.

Fellows :—

Watson: John.

Professional Associate :—

Watson: John, Jun.

SHROPSHIRE.

BROSELY.

Fellow :—

Thursfield: Thomas Howell's.

BRIDGNORTH.

Fellow :—

Wyley: Henry James.

ELLESMERE.

Fellow :—

Tower: Brownlow Richd. Christopher.

LUDLOW.

Fellow :—

Dodgson: Wilfred Longley.

OSWESTRY.

Fellow :—

Williams: William.

SHIFNAL.

Fellow :—

Lane: Cecil Newton.

SHREWSBURY.

Fellows :—

Burd: Laurence.
Evans: William Ernest.
Swettenham: William Norman.
Wyley: William John.

Professional Associate :—

Benson: Robert Alan.

UPPINGTON.

Professional Associate :—

Hall: William Timothy.

SOMERSETSHIRE.

BATH.

Fellows :—

Silcock: Thomas Ball.
Spackman: Henry.

BRUTON.

Fellow :—

Bennett: Thomas Oatley.

CREWKERNE.

Fellow :—

Parsons: Henry.

Professional Associate :—

Parsons: Robert Maurice Peters.

SHEPTON MALLET.

Fellows :—

Heard: Herbert.
Wainwright: Charles Rawlinson.
Wainwright: Charles Rawlinson, Jun.

TAUNTON.

Fellows :—

Hussey: Frank Tooze.
Knollys: James Edward.

WELLS.

Fellow :—

Hippisley: Edwin.

STAFFORDSHIRE.

BLACKFORDLY.

Fellow :—

Joyce: John Hall.

ENDON.

Fellow :—

Heaton: George Herbert.

LICHFIELD.

Fellow :—

Inge: Charles Henry.

LITTLE INGESTRE.

Fellow :—

Mynors: Walter Charles Towers.

STAFFORD.

Fellows :—

Sandy: Henry.
Turnor: Exsuperius Weston.

Associate :—

Hill: Alexander Staveley, Q.C., M.P.

STOKE-UPON-TRENT.

Fellow :—

Forshaw: Edward.

Professional Associate :—

Blundell: Harry.

SUFFOLK.

BURY ST. EDMUNDS.

Fellow :—

Stanley: Henry.

SUFFOLK—*continued.*

IPSWICH.

Fellows :—
Bowler: William Anthony.
Turner: William.

Professional Associate :—
Bond: Frederick George.

LAVENHAM.

Fellow :—
Biddell: William.

NEWMARKET.

Professional Associate :—
Boa: Andrew.

SHOTLEY.

Fellow :—
Spurling: Henry.

SUDBURY.

Fellows :—
Coote: George.
Coote: John.

WOODBRIDGE.

Professional Associate :—
Arnott: John.

SURREY.

CHERTSEY.

Professional Associate :—
Waterer: Clarence.

ENGLEFIELD GREEN.

Fellow :—
Simmonds: Frederick.

FARNHAM.

Fellows :—
Eggar: James Alfred.
Nash: Alfred James.

Professional Associate :—
Williams: William Welsby.

GODALMING.

Fellow :—
Mellersh: Alfred William.

GUILDFORD.

Fellows :—
Bowles: Arthur Humphrey.
Drewitt: George.
Lee: William.
Messenger: William Harry.
Smallpiece: George Baker.

Professional Associate :—
Ellis: Ernest Harold.

LEATHERHEAD.

Fellow :—
Noel: Byron Bruce.

REDHILL.

Fellow :—
Stacey: Harrie.

REIGATE.

Fellows :—
Clutton: Henry.
Clutton: Ralph William.
Lees: John.
Pym: George Edwin.

SURREY—*continued.*

Professional Associates :—
Collier: Arthur Charles.
Garrod: Herbert James.
Thornton: William Henry.

Associate :—
Head: John Merrick.

RICHMOND.

Fellow :—
Chancellor: Albert.

WIMBLEDON.

Fellow :—
Oborne: Alfred William.

SUSSEX.

BRIGHTON.

Fellows :—
Wilkinson: Thomas.
Wood: Frederick.

Professional Associates :—
Udny: Augustus Charles.

CHICHESTER.

Fellows :—
Hobgen: Francis Neale.
Wyatt: Oliver Newman.

CRAWLEY.

Fellow :—
Wood: William.

Professional Associate :—
Taylor: George.

HAILSHAM.

Fellow :—
Burtenshaw: Albert.

HASTINGS.

Fellows :—
Vernon: Walter Liberty.
Vidler: James Coleman.
Woodhams: James.

HAYWARD'S HEATH.

Fellow :—
Bannister: Thomas.

HORSHAM.

Fellow :—
King: Frank Hulme.

HOVE.

Fellow :—
Fuller: Francis.

LEWES.

Fellows :—
Card: Henry Curtis.
Colgate: Thomas, Jun.
Ingram: Walter Fielde
Morris: Herbert.
Powell: Reginald Henry.

Professional Associates :—
Blunt: Herbert Arthur Scawen
Card: Henry.
Powell: Hubert John.

SUSSEX—*continued.*

PETWORTH.
Professional Associate :—
Taylor: Matthew.

PULBOROUGH.
Professional Associate :—
Courthorpe: Alexander.

RYE.
Fellow :—
Vidler: James Coleman.

SEAFORD.
Fellow :—
Turner: William Webb.

UCKFIELD.
Professional Associate :—
Scarlett: Harry.

WARWICKSHIRE.

BIRMINGHAM.
Fellows :—
Bettridge: Edward.
Clarke: Richard.
Couchman: Charles.
Couchman: Robert Edward.
Fowler: Henry.
Fowler: William,
Member of Council.
Godfrey: Robert.
Hedley: Robert Wilkin.
Holbeche: Robert Neville.
Mason: William Arthur.
Mathews: George Spencer.
Mathews: William.
Robins: William Henry.
Smith: William Charles Henry Alston.
Willmott: Francis.
Professional Associates :—
Couchman: Henry Boteler.
Smith: Reginald W.
Willmot: John.

LEAMINGTON.
Fellow :—
Fayerman: George Metcalfe.

LEEK WOOTTEN.
Fellow :—
Donne: Henry.

WARWICK.
Fellow :—
Fosbery: William Thomas Exham.

WESTMORELAND.

KIRKBY LONSDALE.
Fellow :—
Punchard: Frederick.

MILNTHORPE.
Fellow :—
Holme: John.

WILTSHIRE.

CHIPPENHAM.
Fellow :—
Marshall: Lionel Hasler.

WILTSHIRE—*continued.*

Professional Associate :—
Watkins: Robert Arundel.

DOWNTON.
Fellow :—
Squarey: Elias Pitts.
Associate :—
Fream: William, F.L.S., F.G.S.

MARLBOROUGH.
Fellow :—
Jeans: Mark.

PEWSEY.
Fellow :—
Ferris: George.

SALISBURY.
Fellows :—
Bath: Fred.
Gater: Caleb William.
Rawlence: Ernest Alfred.
Rawlence: James.
Rigden: Henry William.
Squarey: Elias Pitts,
Vice-President.

TISBURY.
Fellow :—
Lightfoot: Henry Le Blanc.

WARMINSTER.
Fellows :—
Cruse: Edmund.
Jones: Henry Parr.

WORCESTERSHIRE.

EVESHAM.
Fellow :—
Smith: William.

STOURBRIDGE.
Fellows :—
Fiddian: William.
King: Henry.
Professional Associate :—
Barratt: Harry.

WORCESTER.
Fellow :—
Buck: Albert.

YORKSHIRE.

BARNSLEY.
Fellow :—
Wade: John.

BINGLEY.
Fellow :—
Armistead: Richard.

BRADFORD.
Fellows :—
Cowgill: William.
Murray: Robert Little.
Smith: Joseph.
Professional Associate :—
Smith: Wheater.

YORKSHIRE—*continued.*

DONCASTER.
Fellow :—
Darley: William.
Professional Associate :—
Peace: Alfred Lindley.

GOOLE.
Professional Associates :—
Tudor: Colin Augustus Buchanan.
Tudor: Edward Charles Buchanan.

HALIFAX.
Fellow :—
Horsfall: Richard.
Professional Associate :—
Hebblethwaite: Charles Henry.

HUDDERSFIELD.
Fellows :—
Brook: James.
Brook: Thomas.
Professional Associate :—
Demetriadi: Thomas Marsden.

HULL.
Fellows :—
Botterill: William.
Fryer: George.
Hebblethwaite: Louis.
Tiffen: Joseph.
Todd: William Henry.
Professional Associate :—
Tiffen: John Henry.

KINGSTON-UPON-HULL.
Fellow :—
Wellsted: William Henry.

LEEDS.
Fellows :—
Jones: James William.
Newsam: Samuel Waterhouse.
Richardson: John.

NORTON.
Fellow :—
Abbott: Robert Thomas G.

PENISTONE.
Fellow :—
Greaves: John.
Professional Associate :—
Hinchcliffe: John, Jun.

REDCAR.
Fellow :—
Rutherford: James.

SHEFFIELD.
Fellows :—
Flockton: Thomas James.
Fowler: Frederick.
Innocent: Charles John.
Scargill: Alfred.
Professional Associate :—
Massie: Frank.

YORKSHIRE—*continued.*

THIRSK.
Professional Associate :—
Kerr: Arthur Herbert.

WAKEFIELD.
Professional Associate :—
Kaye: John Edward.

YORK.
Fellows :—
Clutton: William James.
Coleman: John.
Fryer: George.
Watson: Herbert Edward.
Professional Associate :—
Lee George Cansfield.

IRELAND.

DONEGAL.
LETTERKENNY.
Fellow :—
Murphy: Edmund.

LONDONDERRY.
MAGHERAFELT.
Fellow :—
Cartwright: Henry Edward.

SCOTLAND.

BERWICKSHIRE.
COLDSTREAM.
Associate :—
Scott: Henry Robert, The Hon.

EDINBURGH.
EDINBURGH.
Fellow :—
Paterson: Robert.

FORFARSHIRE.
DUNDEE.
Fellow :—
Buchan: Thomas.

LANARKSHIRE.
GLASGOW.
Fellows :—
Binnie: Thomas.
Smellie: Thomas Davies.